JOURNAL

OF THE

United States Cavalry Association.

VOL. XIX.

OCTOBER, 1908.

No. 70.

THE GERONIMO CAMPAIGN.

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[Concluded.]

A FTER the General left, I felt that I should have spoken my mind to him regarding what I believed would be the outcome of his leaving at that time, and felt guilty for not having done so. But, as I have stated before, I knew that General Crook understood the Indian character as well as any man living and, although I foresaw the coming troubles with him away, I feared to suggest to him that it was not a proper time for him to leave this difficult job to his subordinates.

Had Captain Bourke told me, in the conference in his tent the night before the General left, what influences had been brought to bear on Geronimo to induce him to surrender, apart from those that had been offered Chihuahua, as I learned them afterwards, I could have told him and General Crook that he (Geronimo) would never reach Silver Springs with the command. There had been influences at work night and day amon; the Chiricahuas, and the real work had been done before the two conferences were held. Geronimo felt that the "hell" that he received from the General

should have been put on the shoulders of Chihuahua, while, to make matters worse, Chihuahua had received all the attention from the General down to the interpreters, and this caused him and Nachez to become jealous and envious. As a consequence, both took advantage of the opportunity offered by Tribolet's supply of whisky and mescal, and got gloriously drunk, and the Chiricahuas made the night hideous as before related.

There is no doubt but that Geronimo made up his mind that night to play a trick on General Crook that he would never forget, and to prove that Chihuahua was not the whole push.

Shortly after General Crook left for Fort Bowie, I received orders from Lieutenant Maus to break camp, and soon thereafter we pulled out on the trail for the line. Lieutenant Maus led with Chihuahua's band and I brought up the rear with the pack train and a few of our scouts.

When about four miles from the Cañon de los Embudos, one of the Chiricahuas came running up to me and said, "John Daisy Mantan (Mule Captain), Geronimo is very drunk; come and see him." I halted the train and followed the Chiricahua to where Geronimo lav on the ground in a drunken stupor. I shook him and tried to rouse him, and finally he rolled over and recognized me. He spoke to me in a mixture of Apache, Spanish and English, and said, "Natan, mescal heap no good; mucho sick; give me agua." I gave him a drink of water, and finally got him up and on his pony, and then he wanted a drink of whisky or mescal, which I, of course, refused to give him. I, however, promised him that I would give him a drink and a good supper when we got to camp, and told him he would feel all right then. His eyes were bloodshot and bulging, and generally he was a pitiable spectacle. I left him in care of the Chiricahua who had come for me, and told him to bring him on into camp where I would look him up.

As I had anticipated, the Chiricahuas refused to go any further that day when they reached our old camp at the cañon, and unsaddled there, thereby forcing Lieutenant Maus to encamp there also.

When the noon meal was ready, Lieutenant Maus, Gerronimo, Nachez, Chihuahua and two or three others were invited to it, and I tried to make it pleasant for them, although I could see that there was trouble brewing. I had hustled around and gotten a drink of mescal for Geronimo as I had promised, and I had hopes that we would be able to get them on to Silver Springs the following day.

The next morning, March 30th, we broke camp bright and early with the Chiricahuas in the lead, and I bringing up the rear with the pack train as usual. About five miles out was Contrabandista Spring, where the man Tribolet had a small hut from which he supplied beef to the commands, and incidentally kept a supply of whisky, mescal and tobacco for any one, white or red, who had money. As the Chiricahaus seemed to have plenty of money, they never lacked for mescal from the day they first arrived at the Cañon de los Embudos, and as was to be expected, it was a continuous drunk from day to day.

About this time, Lieutenant J. B. Erwin, Fourth Cavalry,* who was attached to Captain Smith's troop and stationed at Silver Springs, took a detachment of his troop and proceeded to Tribolet's ranch and there seized all the mescal and other liquor that he could find and emptied it on the ground. Had this been done earlier, when the hostiles first came to the rendezvous, a world of trouble would have been saved.

As we were following the trail at a good gait, and having made such an early start, every one was in good spirits, and we had visions that we might finally get the renegades to Fort Bowie. However, we soon saw that the head of the column had halted, and one of the scouts came back and reported that the Chiricahuas were going into camp. This stop there, after we had traveled such a short distance, meant but one thing to me—that the Chiricahuas had gone as far towards Fort Bowie as they intended going.

I rode up to Lieutenant Maus, who told me that the Chiricahuas said they were tired and would go no further, and that they had gone into camp without any further ex-

^{*}Now Major and Inspector General.

planation. He then ordered me to select a camp for the pack train.

Seeing that Geronimo had bivouacked his band on the rise of ground on the left of the trail, and that Chihuahua and his band had camped on the low ground at the foot of this incline and also on the left of the trail, I chose the ground on the open flat on the right of the trail and facing both of the hostile camps, thus being in a position where we could be free from annoyance and still be able to watch them.

Later, when discussing the situation with Lieutenant Maus, I expressed the opinion that Geronimo would leave camp before morning; but the Lieutenant seemed to think otherwise.

Soon after dark as the Lieutenant and several of us were sitting around the packer's camp-fire, a shot was fired over our heads by some one of the Chiricahuas in Geronimo's camp. Lieutenant Maus asked me what that meant, and I replied that I thought that it was an invitation for us to leave the camp-fire and go to bed. Soon afterwards a couple of Chiricahuas, one very drunk and the other seemingly sober, came by our fire and made wild gesticulations, at the same time cursing in a mixture of Spanish and Apache. I told our party not to notice them, and said that it was only another of their bluffs to get us to retire. I then motioned the packers to leave the fire and go to their beds about the cargo, where they usually slept, which they did, leaving the Lieutenant and myself at the camp-fire. A few minutes later another shot was fired from the same direction and probably by the same Chiricahua, who had, I thought, been detailed to drive us away from the fire and to bed.

I then told Lieutenant Maus that, in my opinion, the hostiles were at that time making their preparations to skip out, and that they did not want us prowling around to see what they were doing, and that they would not be certain that we would not until we turned in for the night. I also remarked that there would not be a Chiricahua in camp in the morning, and to prove this I will take the "bell horse" around the point in rear of Geronimo's camp and turn the mules

loose to graze there, so that when the hostiles leave their camp they will scare the "bell horse" as they pass by in the direction of Fronteras. I knew that the "bell horse," if frightened, would break for camp followed by the mules, and that this would awaken me and the packers.

The Lieutenant still did not think so, and went off to bed, and I soon followed him, but not to sleep. I had my rifle and ammunition by my side, as I rolled myself in my blanket and there waited patiently for what I felt sure was to follow. The night was perfectly clear, and I could see Chihuahua's band wrapped in their blankets, with not a sign of anything moving. At half past two, by my watch, I again took a look at Chihuahua's camp, but there was no sign of movement, and I began to think that I might be mistaken or that at least Chihuahua was not in the plot with Geronimo.

Some time after three o'clock I thought I heard the faint tinkle of the bell, and soon there was no doubt of it, as I could hear it coming closer and louder. I at once ran with gun in hand to Lieutenant Maus, and told him they were gone. He asked, "What is gone?" and when I said "The Chiricahuas—Geronimo has gone," he replied, "You are crazy; do you not see them over there?" I then said that Chihuahua and his band are there, but Geronimo has gone, and asked him if he did not hear the bell horse coming as fast as he could travel. He still did not believe me, and I asked him to go up on the hill with me and be convinced. By this time the packers were all up, and we went up the incline to where Geronimo's camp had been, only to find that they had skipped for the Sierra Madres.

Upon our return, the Lieutenant asked what was to be done then, and, upon my advice, went to Chihuahua's camp and asked him and Ky-e-ten-a their opinion as to Geronimo's movements. They having heard the stir and noise in our camp were getting up, and said they would look around and report later. Ky-e-ten-a saddled his horse and rode off and was gone nearly an hour.

In the meantime the Lieutenant had counted Chihuahua's band and found that about eighty, young and old, of his band had remained with him. While he was doing this, I interviewed Chihuahua, I having known him well when he was a first sergeant of scouts under Lieutenant Maney, and got his opinion regarding the prospects of Geronimo's returning after getting over the effects of his spree. He said that he would never return of his own accord.

When Ky-e-ten-a returned, he reported that the trail led off towards the Sierra Madres, and that he had followed their trail for some distance in that direction.

After discussing what was the best thing then to be done, Lieutenant Maus decided to send what Chiricahuas there were left on into Fort Bowie, under charge of Lieutenant Shipp, sending with him what pack mules we did not need, and that he with the scouts and the remainder of my pack train would follow Geronimo's trail. I had advised him that it would be absolutely necessary to make some such demonstration in order to satisfy General Crook that we had done all in our power to bring Geronimo and his party to Fort Bowie.

As soon as possible we pulled out on their trail and followed it in the direction of the hamlet of Fronteras, striking the Bavispe River about fifteen miles from our camp. On the other side of this river the trail split, one party, evidently the old men, women and children heading for the Sierra Madre Mountains and the other took up the river. This latter trail was evidently that of the warriors, and they were without doubt bent on a raiding expedition to replenish their stock and supplies, which we found out later was the case.

The scouts finding the trail divided, told Lieutenant Maus that there was no further use of following it, and he decided to return to Fort Bowie, which he did the next day.

While on the return march the next day, April 1st, our scouts saw some signals, which, upon investigation, proved to be made by two of the Chiricahuas, who, having been too drunk to keep up with the renegades, had laid down and gone to sleep and had been left behind. On seeing our party, they decided to join us, and did so. They said that if it had not been for the mescal that they and the others had gotten that none would have left, and all would have returned to Fort Bowie.

In my opinion, the primary cause of this outbreak of Geronimo from the camp was due to the unfortunate manner in which the two conferences were conducted, in which, in the first Geronimo was humiliated, and in the second Chihuahua was lauded and treated with all the courtesy possible. This aroused the jealousy of Geronimo and started the antagonism between the two bands. Geronimo felt that inasmuch as, up to that time, Chihuahua's band had committed all the depredations and murders, he was being unjustly discriminated against, and this, with the easily obtained mescal, started him off on his debauch, which ended by his leaving Lieutenant Maus's camp on the night of March 31st.

We arrived at Fort Bowie on April 3d, and Lieutenant Maus reported the unfortunate circumstances to General Crook. What passed between them I do not know, but on the following day we learned that the General was to be relieved by General Miles.

This astonished me greatly (I am writing from the notes made at that time in a diary that I kept), because I thought there was, or should be, no trouble in inducing Geronimo to come in after he had fully recovered from the effects of his drunks, provided that the proper man was sent after him.

There were several officers among those who had been in command of the scouts in whom the Indians had confidence, and to whom Geronimo would have listened and whose advice he would have followed, and who could have gone to his camp with perfect safety. I could have named half a dozen such officers, any one of whom Geronimo would have received and with whom he would have gladly returned to Bowie. With the exception of Geronimo, Nachez and Ky-eten-a, all had served from one to three enlistments as scouts, and these Indian companies had always been under the command of an officer, chosen usually from the cavalry, and whom they liked and who had their confidence

When Captain Crawford was killed, General Crook lost his right hand man, and the unfortunate trouble with Lieutenant Gatewood regarding the Holbrook postoffice incident deprived him of his next best man, although there were many other officers whose services were as valuable, except that these two were in close touch with the Chiricahuas for from three to six years, and were much beloved by them.

A few days later, while engaged in a game of billiards with General Crook at the Officers' Club, he spoke of this escape of Geronimo, and said he had almost lost confidence in human nature. I then told him that I had been on the point of suggesting to him the morning he took breakfast with me at the Cañon de los Embudos, that he ought to remain and come in with the Chiricahuas, and that had he done so all this trouble would have been avoided. He replied that other duties put upon him by the War Department required his immediate presence at Fort Bowie.

A few evenings later this matter of Geronimo's escape and the best means of effecting his return was being discussed in the club room, and while all agreed that it would have been better to have had in some manner two or three troops of cavalry present at the time of the conference, or soon after, but all feared that the approach of cavalry would have alarmed the hostiles and have caused all of them to leave before the troops could arrive. They, of course, were watching every approach to the rendezvous. Upon being appealed to for my opinion, I stated that it was too late to express my ideas as to what should have been done, but the only possible way to have gotten troops there would have been to have sent word to Captain Smith at Silver Springs and have him send a courier to us with information that the Mexican troops were on the way to Geronimo's camp, and that he was coming with his troops to protect the hostiles from an attack by them. The fear of Mexican troops being in the vicinity would have induced them to accept the protection of the American soldiers. However, all this was an afterthought.

A few days later General Nelson A. Miles arrived at Fort Bowie and assumed command of the Department of Arizona on April 12, 1886, and soon thereafter active operations against Geronimo were resumed.

As in the preceding campaigns, the services of Indian scouts were employed, these being organized into companies commanded by selected officers from the cavalry service.

In these operations against Geronimo, General Miles used the heliograph, by establishing stations on prominent peaks in the zone of operations, these being under the supervision of Lieutenants Dravo and Fuller, of the Signal Corps. It was thought that this and the more general use of military forces, in conjunction with the Indian scouts, would bring the campaign to an early conclusion.

On May 1st my pack train and that of Willis Brown, who had been my cargador in the previous campaign under Captain Crawford, were selected to carry supplies for the command of Captain H. W. Lawton, Fourth Cavalry.

On May 2d I received orders to proceed with both pack trains to Fort Huachuca, and on arrival there to draw the necessary supplies from the Quartermaster's Department, rations, etc., and make all preparations for an early start upon the arrival of Captain Lawton.

These supplies were divided equally between the two trains, so that each mule had a load of about 250 pounds, and the cargo was made ready for moving at an instant's notice.

On the afternoon of the 4th, Captain Lawton and Assistant Surgeon Leonard Wood arrived. I had known Captain Lawton for many years, ever since 1866. He was of athletic build, tall and large of frame; his hair at that time was raven black, and when close cut, as he usually wore it, stood straight up like bristles; his eyes were jet black, and when he was excited they had a nervous twitch; his nose was rather large and inclined to aquiline; forehead low and narrow; he had a delicate mouth which hid a remarkably fine set of teeth; his ears were large and prominent and he always wore a mustache, of which he affected great pride. He was always physically aggressive towards enlisted men and civilian employees, sometimes harshly so, but in later years his disposition underwent a radical change in this respect, apparently to me as his hair changed from a coal black to perfect white, from a rough rudeness to the manners of a Chesterfield. He was always outspoken, even to superiors in rank; strong in his friendships and the reverse to those he disliked. As a quartermaster he had few, if any,

superiors in the art of handling field transportation, and he had rendered invaluable service to General McKenzie throughout his many Indian campaigns in the Southwest ever since the close of the Civil War. He was essentially a soldier, and delighted in his profession.

On May 5th Captain Lawton's command, consisting of thirty five men of Troop "B," Fourth Cavalry (Lawton's), twenty men of Company "D," Eighth Infantry, Lieutenants Terret and Johnson, twenty Indian scouts under Lieutenant L. Finley, Tenth Cavalry, and Tom Horn as chief of sccuts (Horn had served under Captain Crawford and Lieutenant Maus in a similar capacity in the preceding campaign, and rendered valuable service), Assistant Surgeon Wood and the two pack trains of fifty pack mules and fourteen packers each, started from Fort Huachuca, Arizona, ostensibly for the Sierra Mountains, passing down by old Fort Crittenden, Calavasas and Nogales.

When Geronimo had split up his party by sending the women and children to some stronghold in the mountains, he and the others raided the neighboring hamlets and obtained what mounts they needed in addition to some beef cattle, and then joined the others, the entire band consisting of twenty bucks and sixteen women and children.

He naturally expected that General Crook would keep his promise and pursue him until the last one was either captured or killed, and in his stronghold in the mountains awaited developments. Finally, becoming restless and anxious to know what was going on, he made a flying raid to Fort Apache in the latter part of April. There he learned that the troops were on the move, and he again divided his band into two parties, leaving the women and children in some secure and secluded place, and headed for the Patagonia Mountains and the neighboring ranges. This was farther west and in a more thickly settled country than that in which Chihuahua had operated the year before, and he went there probably for two reasons: First, to let the citizens who had been anxious for his scalp, know that he remembered their wishes and was willing to give them the opportunity to take it; and, second, by confining his operations to

the Patagonia, Penito, Mariquilla and Canaea Mountains, he would be able to wear out any mounted troops that should attempt to follow him, particularly as this would secure the safety of the squaw camp in the mountains farther north. After leaving Fort Apache, Geronimo passed south through the San Catalina, Colorado, Whetstone, Mustang. Patagonia and Penito ranges. In this last range he was engaged in a fight with Captain Lebo's troop of the Tenth Cavalry, where a corporal was badly wounded, and who was rescued while under a galling fire by Lieutenant P. H. Clark. I had the pleasure of meeting this young and gallant officer before and afterwards.

Again they were engaged with, or rather surprised by, Captain Hatfield's Troop "D," Fourth Cavalry, on the 15th, near the Santa Cruz River, a few miles southeast of Santa Cruz, where they lost their ponies and all their camp outfit. However, they in turn pursued Captain Hatfield and recaptured their ponies and camp plunder, with the loss to the troop of one man killed. Many acts of bravery were displayed in this fight by Sergeants Adams, Craig and Packer Bowman in rescuing the wounded man before he died, he having used all the ammunition he had in his belt in defending himself.

After this fight, the Chiricahuas separated, one party going east and north in the direction of Apache, and the other to the northwest in the direction of San Carlos, taking advantage of the mountain ranges in each case. Captain Lawton also separated his command, he with Packmaster Brown going west, and my train going with the infantry under Lieutenants Johnson and Terret.

We reached Calavasas about the first of June, where we were joined by Captain Lawton and Dr. Wood. General Miles and his aid, Lieutenant Dapray, arrived about the same time.

The hostiles having reached the neighborhood of Apache and San Carlos, turned and headed for the San Catalina Mountains, where they were attacked by the Tucson Rangers under Dr. Samaniego. In making their escape, they left a small Mexican boy that they had captured in the

hands of the Rangers. From there they passed down through the Colorado, Whetstone, Mustang and Patagonia Mountains, and in the latter were again surprised by Lieutenant R. D. Walsh, Fourth Cavalry (now Captain Ninth Cavalry), who captured their ponies and camp outfit. Captain Lawton continued the pursuit with a detachment of cavalry and scouts - about twelve or fourteen of each - into the Azul Mountains, where they turned in a southeasterly direction, and headed for their squaw camp, which was located, either in the Opata, Backadehuache or Narcori Mountains. After the Chiricahuas left the Azul Mountains, the chase after Geronimo came to an end, and preparations were then made for a campaign into the Sierra Madres. New scouts were enlisted, a fresh detachment of infantry detailed, and a permanent supply camp was established at Oposura in the State of Sonora, with Lieutenant Benson in command, the supplies being hauled to this camp by wagon transportation.

As the Geronimo campaign practically ended with their leaving the Azul Mountains, it may be well to give a brief summary of the events up to this time.

When Geronimo and Nachez broke out from their camp at Fort Apache on May 16, 1885, they took with them 132 Chiricahuas, men, women and children, of whom forty were bucks, and these forty led the troops on many a long and weary chase during the years '85 and '86. Nachez, the head chief, divided his following into three bands under the subchiefs Geronimo, Mangus and Chihuahua, and they headed for the Sierra Madre Mountains in Old Mexico.

There they selected a suitable camp for the women and children, and then proceeded to divert the attention of the troops so as to prevent their discovering the whereabouts of this camp. This they did by leading them, as before related, over the highest mountain ranges in their efforts to wear out the horses and men of the pursuing troops.

Mangus operated in the State of Chihuahua and New Mexico, Chihuahua in the State of Sonora and Arizona, while Nachez and Geronimo guarded the squaw camp. The latter were kept informed of the movements of the troops from time to time.

When the two commands of Major Wirt Davis, operating on the north of the Sierra Madres, and Captain Crawford, on the south, had Geronimo between them, as before stated, Lieutenant Britton Davis captured fifteen of the women and children and old Nana, and about the same time Lieutenant M. W. Day, Ninth Cavalry, captured about the same number of women and children, a squaw and two children being killed by the scouts under his command. This was the first time the squaw camp had been located, and Geronimo found it necessary to divert the troops from that vicinity. This was done by sending raiding parties under Chihuahua, Josanna and Mangus by different routes in the direction of Apache and San Carlos. As they had the scouts in their rear, these raiding parties led them from one range to another, over the highest summits, and occasionally stealing what stock they needed, and killing a few miners and taking their supplies of food and ammunition.

At no time during this campaign were the hostiles without communication between their camps and Fort Apache or San Carlos, and were well posted as to the movements of all commands, and they relied on their friends there to warn them of approaching danger. It was almost impossible to surprise them, although this was done on a few occasions and their ponies captured, but it was easy for them to travel on foot over the highest mountains, their endurance in this respect being simply marvelous. It was also easy for them to obtain remounts by making a raid on the ranches on either side of the line.

To return to the campaign under General Miles: Soon after the supply camp was established, Captain Lawton, learning of some depredations committed by the hostiles in the vicinity of Tonababa, left Oposura the first week in July with a command consisting of a detachment of scouts and some infantry, the former under Lieutenant Brown and the latter under Dr. Wood, the latter taking the trail on foot with the scouts and infantry, and at the same time caring for the sick.

I was compelled to return from Oposura to Fort Huachuca for treatment in the hospital for sciatic rheumatism, and where I remained for four or five weeks. I returned to Captain Lawton's camp in company with Lieutenant A. L. Smith, Fourth Cavalry (now colonel in the Subsistence Department), and Billy Long, a dispatch carrier, his camp then being located about fifteen miles south of Narcori, Captain Crawford's old camp.

Soon after I returned the Captain sent for Tom Horn, chief of scouts, and myself to come to his tent. We found him with a map spread out on his bed on the ground, and he pointed out to me his route since leaving Oposura, and then asked our views as to where the hostiles were then located. He and Horn agreed that they were somewhere within forty or fifty miles south of his camp; but I differed with them, and said there was nothing in that direction to take them there, as the people there were poor, with no cattle, stock or firearms, and there was no game whatever, not even a jack rabbit. I told him that he would probably next hear of them in the Cumpas Valley, or perhaps farther east in the vicinity of Granadas or Oputo.

However, Captain Lawton did not think so, and made preparations to cross the Jarros River, which was high, and a dangerous stream to cross.

As I was still suffering with sciatic rheumatism (I was being treated by Dr. Wood, who gave me morphine to ease the pain), Captain Lawton informed me that he was going to send me back to the supply camp, as it would be impossible for me to go on, and that he would send me in charge of the infantry that he intended sending back to Oposura. He said that in case I met General Miles, I was to tell him that he (Captain Lawton) did not want any more infantrymen, and told me to say to him that he might as well try to hunt Indians with a brass band.

On the way to Oposura I met Lieutenant Wilder, Fourth Cavalry, who enquired as to the whereabouts of Captain Lawton and the hostiles. I told him the direction Lawton had taken, and where I believed the Indians had gone; and while I had not cut any signs, that he had better keep a sharp

lookout for them. The following day I met a Mexican courier with dispatches for Captain Lawton, whom I directed where to find him.

On arriving at Benson's Camp, I learned that Geronimo had passed down the Cumpas range and had killed some miners, and that he was then at Fronteras trying to make terms with the Mexican officials. I did not think that Geronimo was seriously considering this, as it would mean their extermination, but that he was secretly endeavoring to procure supplies as well as mescal.

I learned later that Lieutenant Gatewood was then on his way, with two friendly Chiricahuas, to locate Geronimo with a view of inducing him to surrender. Gatewood knew full well his influence with these Indians, and did not underestimate his powers when he proposed to bring them in.

The two friendlies made their presence known to Geronimo by signal smokes, and on being answered, entered his camp. On telling them that Gatewood wanted to come in and talk with him, Geronimo went out and met him and asked him why he had not come in with the friendlies. Gatewood replied that he was not certain that Geronimo would receive him, upon which the latter replied that his friends were always welcome in his camp, and that it was always safe for them to come.

The Mexican courier that I had met on his way to Captain Lawton had a dispatch informing the Captain that Lieutenant Gatewood was in communication with Geronimo, and ordering him to proceed to Fronteras and join Gatewood as soon as possible. He (Lawton) immediately proceeded with a few scouts, and, riding night and day, joined Gatewood and there met Geronimo. The latter at once asked for supplies, to which request Captain Lawton replied that his pack train would be in soon, when the supplies would be forthcoming. Geronimo then told him that his pack train was lost back in the woods and would not be in for two or three days. Captain Lawton seemed surprised at this, and was more surprised when Geronimo told him every camp he had made and how he was dressed.

The result of the conference of Geronimo with Gate-

wood and Lawton was that he agreed to move with Lawton's command to Skeleton Cañon, inside our lines, where he would confer with General Miles.

While waiting for General Miles at Skeleton Cañon, Geronimo saw what he thought was an indication of an attempt to surround his camp. He at once notified Captain Lawton that it must stop or he would leave. No further attempt was made to surround him. I mention this fact to show the nervous fear that Geronimo had that some trick would be played on him, and were it not for the fact that Gatewood was present, he would not have remained during the prolonged delay that they waited there for the arrival of General Miles.

The General at last came on September 3d, in an ambulance, and after the conference with Geronimo and Nachez, they and a few others were requested to get in the ambulance and ride with the General to Fort Bowie. This they did, and they arrived at Fort Bowie on the evening of September 5th. Captain Lawton arrived with the remainder of the Chiricahuas three days later, when all were put on board the cars and sent to Florida.

BREAKING AND TRAINING AN AUSTRALIAN REMOUNT.

BY FIRST LIEUTENANT CLARENCE LININGER, FIRST CAVALRY.

In the Cavalry Journal of July, 1907, there was published an article written by Major W. C. Brown, Third Cavalry, dealing with his observations of the Australian horses, their cost, breeding, type and fitness for the cavalry service. In the latter months of 1907 he was in Australia purchasing a number, so that at present four troops of the First Cavalry and a number of troops of other regiments have received them as mounts. On January 25, 1908, fifty-four of these animals, raw and untrained, were assigned to Troop "A," First Cavalry, and the following remarks are, with the permission of the regimental commander, copied almost verbatim from the report rendered at the close of the three months period allotted for their training.

Forty-two were geldings, the rest were mares; thirty-two were four-year-olds, the rest ranged from three to seven. Three were broken so that they could be saddled and mounted at once, the remainder were barely "halter-broke," varying in habits from the comparatively gentle ones to the two or three that would rear and strike upon the approach of a man. They had been in the corrals in Manila for about a month previous, where the work upon them had consisted in putting on halters and leading from one corral to another, morning and afternoon; during this time they had become accustomed to the army forage ration.

The work of breaking and training started in immediately; the system followed was in its general features that taught in the Mounted Service School at Fort Riley, with the idea of accomplishing results by gentleness, by the least

possible show of force, by as little opposition as possible on the part of the horse; also to inculcate in him a sense of con fidence in his rider, and to eliminate bucking.

A most noticeable feature was their fear of man; in their life on the range they had come in contact with him little except for branding purposes, while after their purchase they naturally had some rough experiences in corrals, on railroads, and on shipboard. The first object to be obtained was the elimination of this fear. The troop was excused from all other duties for the time being, so that every man could be present at all formations, and to each man was assigned a horse which he alone must break, thereby accustoming the animal to all men through kind treatment from one.

The gentling process was accomplished through feeding, grooming, leading and handling. As soon as the horse would permit it the watering bridle was put on, then in order the surcingle, blanket and surcingle, saddle without stirrups, and last the complete saddle The last brought about the first and only bucking of a goodly number, caused by the rubbing of the hair cincha on the tender skins. All the while leading was being done, in which the man grasping the reins near the bit rings caused the horse to walk out with his nose slightly in advance of the shoulder and with head held up. Results followed almost immediately. Within a couple of days many of the gentler animals had been bridled and saddled. After that came the task of mounting the first time or more without bucking. A stock saddle was put on an old and quiet horse, the colt was brought alongside and a couple of turns taken with the halter strap around the horn, after which he was led around the pen a few times to quiet him down and teach him to lead in this manner. The pen, I might add, was about 15x25 yards in dimensions and with eight-foot sloping walls. The colt's nose was then drawn up to the horn, and the man placed himself on the near side, grasping the reins and check strap with the left hand. Then in order he put his foot in the stirrup, put some weight in it, stood in the stirrup, and finally settled himself in the saddle. This would take

from one to six lessons, depending on the temper of the animal. With his head securely held his most powerful efforts were futile, and he could be led around the hall at will. When his eye and actions indicated that he had become calm in his mind, he was given more strap, and finally released altogether, and allowed to wander around very much at will, being "snubbed up" again to permit the rider to dismount. The number of these lessons likewise depended on the temper of the horse. Up to this point it would be proper to call the work "breaking" and the subsequent handling "training."

At the end of one week twenty-four horses were being ridden, at the end of two weeks forty, and in a few days more all the remainder except two. Of these, one was constantly on sick report, while the other was a difficult case that finally succumbed, making one of the best. The work in training comprised starting and stopping, turning, circling, figure of eights, passing from walk to trot, and vice versa, turnings on forehand and haunches, first dismounted and then mounted, passaging, and at the end of two months the gallop, with the object in view of first making a riding horse before attempting to make a cavalry horse. During the third week the bit and bridgon bridles (a combination makeshift of the curb and watering bridles) were put on thirty of the quieter animals, and flexion lessons, direct and lateral, according to Fillis, were given. The bridle used was far from perfect; but even so fairly good results were obtained. The jaws were opened and made flexible, the necks arched, the heads elevated, and the faces brought to the proper position of almost vertical. Double bridles were put on the remaining horses as they became ready.

At about this time when the two halls became filled to overflowing, those farthest progressed were taken outside for their training. Each of the four squad leaders took the men and horses of his squad and was directly responsible that the work was carried on and followed out as directed. Daily one squad would be dismissed for an hour, with orders to ride about the post to accustom the horses to their surroundings and give them courage in going alone.

Instruction in jumping was given on the longe. A chute was built with an adjustable bar at the end. The horse was put on the lariat and sent into the chute; the man ran along on the outside, letting the rope slip along on the top of the fence. Another man stood by with a whip to touch the horse if he hesitated. Every horse did three feet eight inches, a number did four feet, while two did four feet seven inches. After they had learned to jump in this manner, the mounted instruction followed.

Working out on these lines from day to day for three hours in the morning and two in the afternoon, including grooming, at the end of seven weeks they could be put into good collection, with light jaws, good head carriages, and hind legs well under; would turn on forehand and haunches and pass to the right and left, many at the trot. As all had now become safely confirmed in the trot, the gallop was taken up, and on account of the necessity of completing the pistol firing within the next five weeks, the class of training was slightly altered.

Each day a new article of the full pack equipment was put on, saber and empty pistols were carried and used; tracks were laid out and each man required to ride and handle his horse sufficiently well to take him over at any of the prescribed gaits. Some firing of blanks was done at stables and more at drills; then while going over the track the rider would fire one blank, afterwards two, then three, and so on, or as many as the horse would allow without attempting to leave the track. It was noticed in general that it was not the first shot which frightened, but one of the following.

Pistol firing proper was conducted during the eleventh and twelfth weeks, and with the exception of a couple sick and a couple whose training could not be kept up to the others, every horse was used, and their work was at least as good as the average troop of horses.

Close and extended order drills were had from time to time, including "to fight on foot" and the handling of the led horses.

From April 19th to 27th, inclusive, the troop was on a practice march to Olongapo, the march being taken not with

any idea of testing the efficiency or endurance of the colts, but simply as another step in their training. Fifty-six miles were covered going and sixty-six returning, two days of each being over a very difficult mountain trail, while in the last two days forty four miles were traveled through boggy rice fields or on hot and dusty roads. After the second day their appetites returned, and they ate everything given them, the exigencies of the service, however, keeping them on half hay most of the time. From a training standpoint and as a test of training, the time on the march was well spent, and as they returned in as good shape as they left, the work could evidently have been no hardship, young and unused to it as they were.

The Australian horses are an experiment, and it would not be fair to them nor a logical move to attempt to discover their capabilities at this time, but by the end of the year when they shall have added another year to their ages and shall have had the opportunities for development which the year's work will afford them, they should be given a just and thorough endurance test to ascertain whether in the end, all things considered, they are the horses we want for this service, or the more expensive ones brought over from the States. Observation for the last three months leads to the belief that they can do all that can be expected or demanded. In their favor it can be said that they are better bred than the American cavalry horse, their average falling but little below that of the colts purchased for the Mounted Service School. It was this trait which rendered so practicable the outlined system of breaking, real viciousness being a factor hardly to be considered. While they are lighter in bone and muscle, their joints are good and they give the impression of having the strength to carry all that will be put upon them in this country.

Two features of training appear to be of considerable value, viz., leading and longeing. Not only does the former, as described above, serve to gentle the horse, but it teaches him to move out freely, to go up to the bit and to elevate his head, which in turn tends to a certain extent to bring his hind legs under. Further than that, good leading is essential

for the flexion lessons, and its value is again seen when the led horses of the dismounted troop are first maneuvered. The efficacy of longeing became more apparent as the breaking and training progressed. A horse which was slow to move forward did not understand the meaning of the whip, was loggy or awkward, inclined to play up and not permit his breaker to handle him, was immediately put on the longe and given a good working out, one day or many. In fact it seemed a panacea for all the minor evils. While it shows the animal that he must obey the will of his handler, it goes farther, and becomes a gymnastic exercise not to be underrated, developing suppleness, lightness and activity. The more its use is observed the more does its importance become apparent.

A useful adjunct to the stables was the "pinch bar," a narrow stall, one side of which swung like a gate, into which a horse could be led, tied and pinched in until he was held almost immovable. This was used for those which suddenly became obstreperous, after other means failed, or for medical treatment. For instance, the mallein test was given, properly and with perfect safety and ease shortly after arrival.

The interest and pride which the enlisted men took throughout, is worthy of mention, and it is no exaggeration to say that three months of this work made better horsemen than three years ordinary riding. The adoption of the plan whereby the work was done by squads, seemed not only the best but almost the only one feasible. It ensured the training of every horse on the prescribed lines and gave the squad leaders something very clear and definite to do. The results obtained showed that the confidence put in them was not misplaced.

Higher training is desired, but it is submitted that the period which terminated with the practice march saw the horses in that state of efficiency which will permit the troop to perform any duty for which it may be called.

A CAVALRY SADDLE.

BY CAPTAIN ALONZO GRAY, FOURTEENTH CAVALRY.

FIRST pointing out what I consider to be the defects for cavalry service of the different types of saddles generally used in the United States, I will then consider how these defects may be remedied.

The Stock or Cowboy Saddle.

This saddle finds favor with many for military purposes. For cavalry use, the horn is not necessary. Here a general principle may be stated, viz: Every ounce of extra weight should be discarded unless its adoption is of material advantage.

On this principle the skirt will probably have to be eliminated, although I think this point fairly debatable. A skirt which would cover the saddle blanket would distribute the load over a larger surface, and therefore produce less pressure in any one spot.

The saddle is too heavy. The cantle is much higher than necessary for military purposes.

The English Saddle.

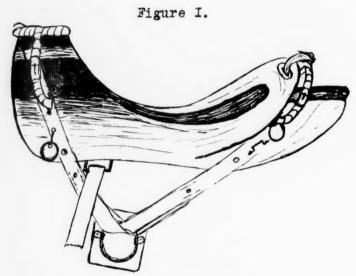
This saddle is growing in favor in our service. It is adapted for polo and hurdle racing, but not adapted for field service, for the reason that there are no points of attachment for a pack.

The Whitman Saddle.

The Whitman seat is not so flat as the English, nor yet so straight as the McClellan. I believe it to be the best for the reason that it is nearest to the natural seat. By the "natural seat," I mean the seat naturally assumed by a good rider when he mounts a bareback horse. The pommel of the Whitman saddle is, however, so low that even with due care, and when supplemented by use of a crupper, it will usually give sore withers. On this point I feel competent to speak with ample experience.

The McClellan Saddle.

This saddle has given general satisfaction in our service for many years, but that is no reason why the present model should be persistently adhered to when it can be improved.

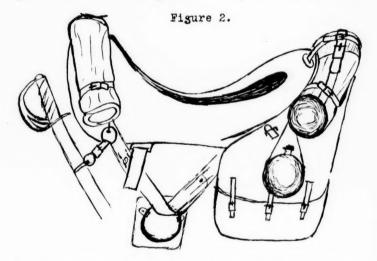


The most common results of its defects are:

- 1st. Pommel sores caused by the pommel rubbing withers that are either high and fine or low and thick.
- 2d. Cantle sores, due either to the cantle roll resting on the loin or the rear points of the side bars boring into the horse's back.
 - 3d. The constant slipping of the saddle blanket.
 The sores render the horse unserviceable, and the slip-

ping of the blanket renders the horse temporarily so. This slipping may occur at a very inconvenient moment, when it will be impossible to stop and adjust it. To neglect to do so will result in a sore back. I believe the pommel sores can be avoided by making the arch higher and broader, such as is now found in the stock saddle. The cantle sores can be avoided by extending the side bars to the rear, as is found in the English service saddles. The slipping of the blanket may be stopped by lining the bearing surface with fleece.

Other defects of the McClellan saddle are: The cantle is too high, causing the trooper to sit upright to the extent of not preserving the greatest equilibrium or affording the greatest comfort. The greater the equilibrium, the better



can the trooper fight and ride; and the greater the comfort the more exertion he can endure.

I do not favor the twisted stirrup strap as now issued. While it causes the stirrup to hang to the rear, the edge of the buckle presses against the trooper's shin, causing much annoyance.

I am much in favor of the hooded stirrup as now issued. It protects the feet from brush, sun, wind, rain and snow. I once rode an open stirrup in a cold rain, which turned to

sleet and then snow. This one experience forever settled the question of the hooded stirrup in my mind.

As to the question of thongs vs. straps, I observe that thongs are quicker to use, being always ready. The strap looks neat when the rolls are on the saddle. They are not as a rule done up neatly when no pack is carried, and often look slovenly.

In the sketches accompanying these notes I have tried to illustrate my idea of what the cavalry saddle should be. I have borrowed freely from all the others. The pommel is the stock saddle pommel without the horn. The seat, cantle and position of stirrup are from the Whitman. The extended side bars are from the English. Other features are from the McClellan.

Fig. 1 shows the saddle stripped and Fig. 2 shows it packed.

ARMY REORGANIZATION; AN ARGUMENT FOR THE MOUNTED BRANCHES.

By A CAVALRY OFFICER.

WITH the growth of the nation, and its increasing responsibilities over seas, came the necessity of increasing, from time to time, its national defenses. The army, in the past ten years, has been enlarged and reorganized, and its schedule of pay has been materially increased. The increasingly important functions assigned the army to perform caused these betterments, and they, in turn, caused increased efficiency.

It must be admitted that the nature of the operations of the army during the past ten years has been such that the cavalry arm has had to perform much of its work dismounted, and that, in consequence, a heavier share of tropical service has fallen to the lot of the infantry. This disparity is not very great, however. Forty per cent. of the cavalry arm—six regiments—and forty-three per cent. of the infantry—thirteen regiments—are now stationed in the Islands. This is a fair ratio of the duty performed by the two arms during the period under consideration.

So much for present needs. The proportions of the various arms of the service—cavalry, field artillery, coast artillery, and infantry—are not, however, based on present needs. If they were, we would have no coast artillery at all, very little field artillery, and no more cavalry and infantry than we now have. The horizon never showed a less belligerent aspect. The nations of the earth are busy with peaceful pursuits.

An army, like any other sort of insurance, is for the unexpected emergency. Each nation of the world must either maintain its own system of defense, or, in exchange for a portion of its sovereignty, depend upon the defensive strength of its stronger allies.

The United States acknowledges no ally. Its policy is to avoid alliances of all sorts with stronger nations, and to place its strength and resources at the service of its weaker brothers on the American continents when a stronger nation threatens their independence.

The Constitution of the nation and the overwhelming sentiment of its citizens is against maintaining a large standing army, consequently in our defensive scheme the use of volunteers, or militia, must be depended on for the main line of defense. At the outbreak of a war with a first class power, the Regular Army and the more thoroughly trained regiments of the National Guard will form only the first line of the defense. In holding back an invading army, or in establishing a foothold on his soil, this line would disappear, and would only have served to delay matters until the second and numerically much stronger line can be mobilized, equipped, and put in fighting condition.

The world has just been given an opportunity to study the influence a lack of cavalry has in a war between two powerful nations. Unfortunately the object lesson did not show us what the effect would have been if one nation, equal in all other respects, had possessed a preponderance of that arm. But the lesson, imperfect as it has been, must still convince any judicially minded student of grand tactics that a strong cavalry arm is necessary in the prosecution of an

offensive campaign.

The second line, for the infantry, is going to come from the National Guard; it must come from there. The regular regiments will be stripped of their more knowing and more ambitious officers, who will seek and obtain volunteer commissions with increased rank. Their regiments will degenerate, as was the case in the Civil War, into mere battalions, under officered and manned with recruits.

The spirit now in the National Guard, if maintained, will furnish better material, and in larger numbers, for the second line than ever before. But where the second line cavalry and field artillery are to come from is another question. There are, in the entire Guard, but two organized regiments of cavalry. Several of the States have squadrons organized, but the greater number are satisfied with a troop or two. In the United States there are one hundred and fifty-two regiments of National Guard infantry, seventy two troops (the equivalent of six regiments) of cavalry, and fifty-four light batteries. The ratio of infantry to cavalry is as twenty-five to one.

So the nation, in preparing its mobile defenses, finds a large force of citizen infantry, of greater or less efficiency, being trained. Neither the infantry or the cavalry or the field artillery of the National Guard will go into an extended war—one that threatens the integrity of the nation—with their present membership; that is a condition that must be confronted. But, nevertheless, a great many of the young men of the country are being trained, more or less imperfectly, to be infantry officers. They are being taught to shoot, to march; they are instructed in camp sanitation and camp discipline; they are practiced in the services of security and information. These young men, captains, lieutenants, sergeants, corporals and privates, in training now, and those to be trained during peace times in the future, must furnish the officers of the infantry regiments of the second line when the United States goes to war.

There is no such large school for officers of the mounted branches. Cavalry and field artillery organizations cost too much money for the rural assemblyman. Any village of two thousand inhabitants can muster sixty young men who might organize a company of infantry. It costs but little to maintain such an organization. But a troop of cavalry, or a battery of field artillery is a different matter, and it is only in the larger and wealthier communities that enough young men with sufficient means and leisure can be found to compose it. The very fact that the members of these organizations must be men of private means inspires the idea—an entirely erroneous one—that they are merely social clubs with military features, and so limits appropriations for their support.

The proportion of cavalry and field artillery to infantry in the army in its peace organization is entirely too large for a war time organization. But the relative sizes of the three arms in the army and its reserves, the National Guard, are equally out of proportion in the other direction. For that reason the cavalry and field artillery arms in the army should be increased still more, not only absolutely, but relatively to any increase in the infantry. This, independently of any other argument is sufficient to cause all persons interested in the efficiency of our defensive system to bend all their energies to a reorganization of the cavalry and field artillery, not only in the army, but in the National Guard as well.

There is, however, another argument that must be prominently advanced. Efficiency in the army, as elsewhere, is directly measured by the energy and ability of its officers. Energy can only be maintained when there is hope of reward. The consciousness of duty well performed is not enough to keep the average human up to his best work. must look forward to promotion. When an officer at any station finds himself outranked by officers of another arm junior to him in age, experience and length of service. his philosophy is strong indeed if the mere fact, unimportant in immediate results as it may be, does not constantly irritate him and make his duties irksome. His usefulness is impaired. When this disparity in rank (as is now the case in the cavalry) threatens the attainment of the ambition of every good officer, his ultimate promotion to the grade of general officer, his efficiency is still more impaired. When the outlook is such as to absolutely preclude the possibility of such promotion, in the general case his performance of duty becomes perfunctory, and his usefulness is nearly gone.

Authority to command, rank, is the most important of a line officer's functions. The reward of his years of preparation is to enjoy that authority; to exercise the talents he has developed in that direction. This, and freedom from financial care, are, in time of peace, and from his personal standpoint, the two things that make a successful military career. We have seen in the artillery, and prior to 1898, the blight-

ing effect of slow promotion and small pay, and since that year the revivifying influence of rapid promotion, bringing with it increased rank and higher pay. No lesson could be more complete. The same officers who were content under the old organization to watch their soldiers shorten the grass on their obsolete parapets, and whose children hid their toys in the bores of the antiquated muzzle-loaders that made opera bouffe of our coast defenses, at once, under the stimulus of rapid promotion and proper organization, put our harbors in a state of perfect defense. The progress they have made in the development of their arm is almost beyond belief.

And so it will be in our own arm. If we sit idly by watching the other branches of the service work out suitable legislation for the betterment of their own branches of the service, content to groom our horses and drill our men, with no outlook for future promotion, our young officers will fall into the lethargic sleep that so long oppressed the artillery.

Rank and pay, these are the two things every officer should fight for to the last extremity. As they go hand in hand, there is no confusing the issue. It is not merely an expedient—this matter of fighting for our rights—it is a thing that is vital to our very existence.

Since the cavalry's reserve in the scheme of national defense is so small, it is all the more important that the efficiency of the first line be maintained at the highest point. The outlook for promotion in peace time for the cavalry officer must be as good as that of any other officer of the mobile part of the line. For that reason every cavalry officer should keep this idea constantly before him. He must work for it on all occasions, in every honorable way.

"It is impossible to conceive of any general reorganization of the army, along any lines whatever, for immediate necessities or for future needs, that does not commence," continue and end with this vital principle: Equal promotion in time of peace for all officers of the mobile part of the line of the army.

CAPTAIN CRAWFORD'S LAST EXPEDITION.*

BY LIEUTENANT W. E. SHIPP, TENTH CAVALRY.

In the United States Army Register for 1887, we find the following entry: "Died—Captain Emmett Crawford, Third Cavalry, January 18, 1886, near Nacori, Mexico, of wounds received January 11, 1886, in an attack made on his command of Indian scouts by a force of Mexicans."

The circumstances attending his death were so sad and so peculiar, and the character of Captain Crawford was so elevated and noble, that the story of his last expedition possesses a mournful interest for those acquainted with it.

It was the lot of the writer to be a member of this expedition, and to be thrown into intimate association with him, and so to learn to know and to love him; to witness his fall and death; and finally to see his remains buried in the land of strangers—of those who had killed him while he was trying to help them. It is the fact of having had these opportunities, together with the desire to pay a tribute to the memory of one so worthy to be classed among our heroes, that furnishes the reason for writing this account.

What is generally known as Geronimo's outbreak led to the circumstances which resulted in the death of Captain Crawford, and it will therefore be necessary to begin our story by a brief account of that outbreak.

^{*}This article is reprinted from the Cavalry Journal of December, 1892, by the request of several members, with a view of correcting some discrepancies in the article on the Geronimo campaign, appearing in the last and present number of the Journal. Also on account of the general interest in these articles as shown by these requests and the demand for copies of the Journal containing them.

The writer, Lieutenant W. E. Shipp, was killed in action at San Juan, Santiago, Cuba, July 1, 1898.

In May, 1885, a large portion of the Chiricahua and Warm Spring Apaches, then united as one tribe, without cause left their reservation at Fort Apache, Arizona. Nachez was their hereditary chief, and, being a man of ability in addition, was the real leader; the son of old Cochise, who was for many years the terror of the Southwest, Nachez was worthy of his father. Geronimo was the medicine man and orator of the tribe. He was not a great warrior; but, like Sitting Bull in the North, his influence was powerful among his people. A man of diabolical appearance, and with a character to correspond, he always appealed to the bad side of the Indian nature; and they, like too many people in this world, generally listened to him in preference to better men. By some chance Geronimo was always credited by the whites with being at the head of the renegades; this error is of so little importance that, for the sake of convenience, we will adopt it.

The Indians at once entered upon a career of murder and pillage, embracing in their zone of operations large portions of Arizona and New Mexico in the United States, and Chihuahua and Sonora in Old Mexico. The theater of war was so rough and barren that it was with great difficulty that they were followed at all by the troops. Fitted by nature and by long experience for such warfare, and finding plenty of food by stealing cattle and horses, they laughed at their pursuers and continued to spread desolation and terror wherever they chose to go. The broken down horses and the ragged and worn out soldiers showed the work the troops had been doing—work discouraging and doubly hard on account of the almost total lack of success.

Seeing that the efforts of the regulars were fruitless, General Crook, the Department Commander, turned to a plan which had long been a favorite one with him: the employment of Indian scouts to subdue their own people. The hostiles, or "broncos," as they were generally called, had made their headquarters in the great Sierra Madre Range in Mexico, where they had a safe base for operating both in our country and in Mexican territory. A treaty was now made in Washington, which allowed our troops to cross the bor-

der, but it had the great drawback of not allowing us to establish any supply camps in Mexico.

Under General Crook's plan two expeditions were organized, composed mainly of scouts, and commanded by Captain Wirt Davis, Fourth Cavalry, and Captain Emmett Crawford, Third Cavalry. The latter had been recalled for this duty from Texas, where he had just gone with his regiment. He had entered the army after the war from the volunteer service, and had since been almost continuously in active service on the frontier, taking part in most of our great Indian wars, and making for himself a reputation for bravery and devotion to duty not surpassed by that of any officer of the Though he had distinguished himself in the Northern campaigns against the Sioux and others, yet it is probable that his service in Arizona had been still more valuable. In 1883 he had commanded the scouts in General Crook's expedition into Mexico, the first expedition ever organized for a campaign against Indians in that country.

Returning from this duty, he was placed in police charge of the San Carlos Reservation, where he had entire control of the Indians lately on the war-path, and where he also kept order among the other turbulent elements. Constantly opposed by employees of the Interior Department and other interested parties, his final overthrow of his enemies and the exposure of their frauds, led to a lasting change in the administration of affairs on the reservation; a change for which the people of Arizona have yet cause to be thankful. Captain Crawford had a thorough knowledge of Indian (especially Apache) character; and he knew personally a great number of the men of this tribe. This knowledge, together with his high character, gave him great influence with them. They knew from experience that they could believe him and trust him; he was kind to them, yet never allowed familiarity; his pure life, his devotion to duty and his fearlessness in the discharge of it, won their respect. Hence he was peculiarly fitted to command them when they took service under the government.

The two expeditions sent into Mexico were as successful as could have been expected, each capturing a number of

squaws and children, and breaking up the camps which had formed the homes of the "broncos." The wearing-out process seemed to furnish the only hope of subduing them; this process, however, promised to be long and somewhat tedious.

In the fall the commands were brought in and thoroughly reorganized. It had been necessary to send out the first expeditions rather hastily; now time was taken to more carefully select the scouts and to more thoroughly equip the commands. The commanders remained the same, but some changes were made among the other officers. Captain Crawford chose the White Mountain Apaches and the friendly Chiricahuas as his scouts, because they were mountain Indians, and were less civilized than the other tribes, and therefore, in his opinion, better fitted for the work to be done. The Chiricahuas were part of the tribe then on the war path, and had themselves been at peace only about two years. No soldiers were to be taken. The peculiar material selected was believed to be that best adapted to the task of following Geronimo's people into their retreats in the terrific fastnesses of the Sierra Madre, where it was hoped to surprise them and compel their surrender. Surprise was absolutely necessary to success; once aware of the proximity of foes, the hostiles would scatter and render it impossible to follow them. Indians of other tribes and soldiers were not believed to possess the skill and endurance necessary to surprise the vigilant Chiricahuas; Captain Crawford in his previous expedition had found the soldiers he had with him a burden.

The great risk taken in trusting so largely to relatives of the hostiles seemed justifiable, as they alone knew the haunts and habits of the enemy. Many gloomy predictions were made about their treachery, but the many eager offers of service by the young officers in the department showed that they at least were not daunted by the prospect. The selections made were first Lieutenant M. P. Maus, First Infantry, and Second Lieutenant W. E. Shipp, Tenth Cavalry, to command scout companies; Second Lieutenant S. L. Faison, First Infantry, to be Adjutant, Quartermaster and

Commissary; Dr. T. B. Davis, United States Army, to be Surgeon. One hundred scouts were enlisted at Fort Apache, and started for Mexico on the 18th of November, 1885. But before we follow the command on its march it will be necessary to take a look at its organization and personnel.

Two white chiefs of scouts assisted the officers, their principal duty being the daily issue of rations—daily, because the scouts would always eat up at once whatever was given to them. One of these men, Horn, also interpreted from Spanish into English. Concepcion, an old Mexican, who had been a captive, was Apache interpreter. The two interpreters were necessary, because no one could be found to interpret directly from Apache. The interpreters were used only in important talks, as the scouts and their officers understood each other well enough for ordinary purposes. Noche, a Chiricahua, was the Sergeant Major, and performed the duties of leading guide and scout. His superior for these duties never existed. The other conspicuous scouts who were always selected for difficult service were, Cooney, Cuso, Dutchy, Wassil, Kat-e-kahn and Chi kiz in among the Chiricahuas; Nah-wah-zhe-tah, Good-e-na-ha, Loco and Josh among the White Mountains. Some of these deserve our notice. Cooney and Cuso were two short, big-chested men, with almost unlimited powers of endurance; in their savage way they were as honest and loyal as men could be, and were splendid scouts. Dutchy was a known murderer; brutal and mean, but in many respects a valuable scout.

Our captain's treatment of Dutchy well illustrates his methods with Indians. During the previous summer this man had mutinied and had been sent to Fort Bowie, where he was put in irons. Though he was undoubtedly guilty, Captain Crawford took him again as a scout, but refused to give him the chevrons he demanded. He, however, selected him as his body servant, and trusted implicitly this man who had not long before threatened his life. The result was the establishment of a complete ascendency over Dutchy, and increased respect on the part of the others, as they saw how little he feared this dangerous man. Wassil was an old man, a fine scout, and the best hunter of all. His claim to fame

rests, however, on his escape from the train conveying him to Florida in September, 1886, and his return from Independence, Mo., to Arizona. His long journey through an unknown country, part of it thickly settled, shows what an Indian can do towards finding his way. He is now (1891) a renegade in the mountains; has committed several murders, and seems safe from capture.

Nah-wah-zhe-tah, or Nosey, as he was irreverently but appropriately called, was a great medicine man—which means that he was a doctor, preacher, conjurer and prophet, all in one. Dressed in an old alpaca coat, ornamented with a pair of shoulder straps, and a pair of cavalry officer's trousers, much too long for his short legs, his first appearance was hardly in keeping with his solemn character and functions. Though undoubtedly a humbug, yet his influence was exercised for good, and rendered the task of governing the wild scouts much easier. Poor old Nosey is now in jail for killing his own chief, the result of too much tiswin, the Apache intoxicant.

The scouts were not burdened with much clothing—the soldier's blouse, a pair of cotton drawers and a waist cloth, moccasins and a red head-band, constituted the usual costume. Their picturesqueness, and above all, their efficiency. were not spoiled by attempts to make them look like regulars. In these men were apparent the results of heredity and long training. Small and unable to compete with white men in any athletic sports, yet they made us feel like babies when it came to mountain work. The Chiricahuas, especially, were a never-ending source of wonder. knowledge of country; their powers of observation and deduction; their watchfulness, endurance and ability to take care of themselves under all circumstances, made them seem at times like superior beings from another world. wonder our soldiers could not catch people like these. If our little army of 25,000 were composed of such men, and animated by the proper spirit, it would be unconquerable by the best army now existing in Europe.

The command exercised over the scouts depended mainly upon the moral influence of the officers. Eager as they

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seemed to be to do their duty, care was taken to avoid trying to force them into ways foreign to their nature and training. They fully understood their work, and except to exercise a general control and supervision over them, no attempt was made to interfere. The temptation to be unduly meddlesome was, however, not strong, for most of the scouts had been on the war-path, which meant that many white men had been killed by them. They were, however, treated with perfect confidence, and soon little thought was given to their former bloody records.

The methods of camping and marching were in conformity with the character of these troops. They cooked their own food without the necessity of supervision, and, on going into camp, they always voluntarily took such precautions as circumstances made necessary. They were ready to start by sunrise, or sooner, and when not in a dangerous neighborhood, much liberty was allowed them, so that they scattered on foot in hunting parties; at the same time they were sure to find signs of the hostiles if the latter were anywhere in the neighborhood. The officers and chiefs of scouts, on mules or on foot, accompanied the scouts to see that no depredations were committed. This free life had many charms, despite the hardships often accompanying it. All supplies and baggage were carried on the pack-mules, these being divided into three big trains, under Daly, Hayes and Rover, forty-five packs to each train. The aparejo was, of course, the pack-saddle used; each mule, when in good condition, could carry comfortably about 250 pounds. Each train was complete in itself, with its "boss packer," its cargador (the man who arranged the loads and kept everything in repair), its blacksmith, its cooks, and its bell horse. Seven other men belonged to a train, but no matter what a man's position was-boss or cook-he was expected to help pack. Most of the mules were seasoned to mountain work and the packers were old hands, many of them having spent the best years of their lives in the Government service. There was very little room for improvement in these trains; if the Government could always count on service as efficient as that rendered by the packers in this campaign, there

would be no cause for complaint. The trains have now all been broken up, many of the mules sold, and most of the packers discharged without reward or recognition. It is a pity that these schools for the difficult art of packing no longer exist. Some day, perhaps even in a civilized war, there may be cause to regret it.

From the starting point at Fort Apache the command went to Fort Bowie, Arizona - General Crook's field headquarters-where it was inspected by General Sheridan. After a few words of encouragement from him and from General Crook, we started on a night march to the Dragoon Mountains, Arizona, as a band of hostiles had been reported in that neighborhood. After a week's scouting, no trail being found, we crossed the Mexican line into Sonora on the 6th of December, heading towards Fronteras. From there we went south to the mining town of Nacosari, and then, leaving all roads, struck into big mountains on the west slope of the Sierra Madre, where there was plenty of hard work. An abundance of deer made the fare good, however, and compensated us for other hardships. Emerging from the mountains we found ourselves in the valley of the Barispe, a tributary of the Yaqui, and camped at the town of Huasabas, where groves of orange and lemon trees showed the tropical nature of the country. The fruit helped at the Christmas dinners, which otherwise would have been almost wholly made up from Uncle Sam's army ration. The valley of the Barispe was fertile, but the inhabitants did not appreciate the advantages nature had given them; the, were a miserable people, living in mud huts almost bare of furniture, and wanting in every comfort. Wheeled vehicles were unknown: the burro did the freighting for the country. The Apaches had long been a terror, but the Mexicans seemed to regard them as a natural evil not to be gotten rid of by any effort on their part. There were no doctors among them, and during our stay they availed themselves of the services of our kind-hearted surgeon, who was never idle, receiving, however, as fees, only a few oranges or a cheese, sometimes a welcome bottle of mescal.

Huasabas was the scene of our first serious trouble with-

the Mexicans. One of the scouts, who was drunk, but unarmed, was so badly shot in the face by a soldier that he had to be sent back home. At such times the exertions of the officers alone prevented bloody fights; their duties were dangerous and not at all pleasant.

There were plenty of rumors of outrages still farther south, so we crossed the mountains in that direction, and came to Bacadehuachi, a tiny town for such a name. Here, hid away in these wilds, was a crumbling mission, one of those monuments to the wonderful old priests who, ages ago, braved hardships and dangers to plant their religion among the Indians; sometimes accomplishing much, their zeal too often brought their lives to an end in torture. The priests of that day must have been experts at solving the labor question, to have gotten out of the ancestors of the lazy people we saw the work necessary to build this big brick church with its bells, its towers and its wings.

The Apaches had left their mark all through the country we were now traversing. The abandoned and ruined ranches, and occasionally a deserted village; the way in which the people spoke; the dismal stories they told, and the scars they showed, and the general desolation which prevailed in this fertile and well-watered, though rough country, all bore witness to the curse these Indians were. Nacori, the next village, was surrounded by a wall to protect the inhabitants, and the little fields hugging the town showed that they did not dare to go far from it.

Our hardest work was now at hand; the country was getting rougher still, and there was no doubt that the hostiles were not far away. The surplus rations were stored in Nacori, and Lieutenant Faison was sent to Lang's Ranch, N. M., with two pack trains for more. Taking Daly's train, Captain Crawford, marching at night, went into camp about twenty miles to the south of Nacori, and sent out a small party on foot to explore. This party having returned without seeing any signs, it was decided to leave the pack-train in camp with a small guard, and to strike out on foot for the rough country near the forks of the Yaqui, where the Mexicans had reported Geronimo's headquarters to be located.

Safe in this retreat, where they had never been followed, the Indians had been sending out small parties to kill and to steal. Twelve days rations and one blanket for each officer and scout were to be packed on a few of the best mules, the three packers accompanying them being the only men allowed to ride. When the scouts found that we were to walk with them, they begged hard to be allowed to go alone, as they felt certain that the white men could not keep up. But the Captain would not submit to such an arrangement, and they reluctantly gave up.

Before starting, there was a big medicine dance at which old Nah-wah zhe-tah for the first time unrolled the sacred buckskin which he had worn over his shoulder since he had left Fort Apache. The ceremonies were impressive, even to the white men. So thoroughly in earnest were the Indians that the solemn dances and marching, the kneeling before the sacred buckskin as it was presented to be kissed, and the old medicine man's blessing of the arms, seemed not meaningless to us as we looked on in silence. With Noche and a picked band, equally divided between the Chiricahuas and White Mountains, leading, we started out on the 3d of January, 1886, and camped that night on the Haros River, a large tributary of the Yaqui. On this and the following marches the advance guard marched far ahead, thoroughly reconnoitering the country; immediately preceding the main body were a few good scouts; Captain Crawford always led the main body, and allowed none of the scouts in it to get in front of him. Fording the river in the morning, we were toiling up and down the steep hills beyond when, about six miles from the river, a small trail of Indians was struck, and soon after, the trail of a big band traveling east. Many tracks of ponies and cattle showed how successfully they had been marauding. From some slight sign the scouts declared that Nachez was with the band, which meant that Geronimo was there also. Cautiously as we had been advancing before, it was now necessary to be still more careful, for we were on the trail of Indians whose vigilance never relaxed, even here where they had never been followed. The extreme caution of these Indians was shown by the location of

their camps, which were always high up on some well guarded point, whence all the approaches could be watched. It mattered not to the bucks who selected them how many miles the poor squaws had to carry wood and water. The way the trail ran, concealed as it ascended the hill and exposed to view as it descended, was another evidence that they did not intend to be caught napping. This necessitated many a weary detour, as their watchful rear guard might at any time discover us if we followed the down hill trail.

In the hope that the Indians would establish a permanent camp, we hustled on, thinking it possible that the scouts, as expert as they, might be able to surprise them. From the time we started on this foot scout, the hardships had been great. The country was so rough that it seemed nature must have made a special effort in that direction. Wearing moccasins whose thin soles allowed the feet to feel every stone of the million that lay in the path, we had to keep up with our Indians, who had been climbing mountains since they were babies, and whose ancestors had for ages been mountaineers. The days were fairly warm, but the high altitude made the nights bitterly cold. Without shelter and limited to one blanket each, and with no fires allowed, sleep was almost impossible to all except the scouts, who slept in long rows, with one's head at his neighbor's feet, and seemed tolerably comfortable. We could not start till the advanced scouts had thoroughly reconnoitered the country, so that it was always late in the day when we broke camp. The marches did not end till late at night, when camp, cheerless as it was, was at least better than the endless climbing of mountains or falling over rocks. Often we had to follow some cañon in which lay immovable boulders, made slippery by the water which had once flowed over them. Going through them in the dark, it seemed as if we would surely break our necks or dash out our brains, so often did we fall.

Deer were plentiful, but none could be killed for fear of betraying our presence. The blouses were turned so as to expose the gray lining, which was less conspicuous than the blue side, and all prominent marks about the person were discarded. When it was necessary to make fires for cooking,

the scouts took charge; in the day time small smokeless fires were made from very dry wood; at night the fires were hid away in some gully or depression, so that they could not be seen a few yards away. In crossing ridges, care was taken never to expose the body against the sky line. Whether in camp or on the march the scouts exercised a constant watchfulness, and no precaution that could possibly be taken was ever neglected. Long habit had made these things come naturally to them. Watching the scouts, one could not help thinking how hopeless was the attempt to catch people like them with men trained and equipped in the manner of our own soldiers. The Apache seems to see everything and to know everything when in the field; no matter how dim a trail may be, it may be made by a few moccasined feet passing over rocks, he follows it by sight as easily as the good hound follows his prey by scent. Soldiers, I mean officers as well, nearly always scorn the precautions that Indians never neglect. Many a time the pursuer has found himself only too glad to escape from the little band he had started out to destroy. We made but few miles a day, so many halts had to be made to reconnoiter, the country was so rough and night marching so difficult. Cattle from which only a few pounds of meat had been cut were often found lying on the road. On the 6th, the remains of a number were found, the meat having been carried off, and no more tracks were seen. On the 7th the trail crossed the Haros, and we found ourselves in that terrible country between the Haros and the Satochi, so appropriately called by the Mexicans "Espinosa del Diablo," or "Backbone of the Devil."

On the 9th of January the start was made about noon, and we had already made a good day's march when at dusk, Noche reported that the hostile camp had been located. Fearing that we would be discovered if we delayed, it was decided to march all night and attack at daylight. The mules were far to the rear and had to be left behind; so, with empty stomachs, we began this toilsome march that was to test the strength of the scouts no less than that of the white men. The doctor remained with the packs, as did also the old interpreter, Concepcion, who was worn out

and unable to keep up. His absence was afterwards a source of much trouble. During all this dark night we climbed steep mountains covered with loose stones, or struggled through gloomy canons, following our Chiricahua guides, who seemed perfectly at home. Sometimes we almost despaired, and felt like succumbing to the fatigue that nearly overpowered us; but at such moments the thought of what dawn should bring buoyed us up and revived our drooping

spirits.

At length, just before daylight, we drew near the high, rocky point where the camp was said to be, and the command was divided so as, if possible, to surround it. After some delay we crept forward, scarcely breathing as we moved: and, to some of us, there came strange sensations, as in the dark, still night, we thought of the isolation of our position, for, in this wild and unknown region, we were led on by allies who had often proved how crafty and bloodthirsty they could be. But success seemed almost assured, and exultation was taking the place of these feelings, when some burros in the herd of the hostiles began braying and, like the geese of ancient Rome, aroused the camp to a sense of its danger. Some of the "broncos," running out to try and carry off their stock, were fired upon by the scouts, who then rushed into the rocks near by and opened a lively fusillade, accompanying it with their shrill cries of defiance. Answering shots came from the camp, close at hand in a cluster of large rocks, that we afterward saw formed a stronghold capable of defense by a very few men. The behavior of the scouts at this juncture was very disappointing. A rush into the camp would have insured the capture of the squaws and children at least, probably after a bloody fight. But they scattered through the rocks and, deaf to all appeals, allowed themselves to be held in check by the fire of the hostiles, who finally escaped in the darkness, leaving behind all their stock, provisions and blankets. The officers could do nothing, for Apaches always fight in their own way, and instead of following one who tries to lead them to a charge, they look upon him as a fool and unworthy of confidence. In this case it was impossible for us to tell friends from foes;

every time I myself attempted to shoot I was stopped, because I was about to shoot a scout; at last, in desperation, I fired two shots at some figure dimly seen. Who he was I never knew, for I missed him.

In this affair one "bronco" was slightly wounded. We suffered no casualties whatever. Soldiers in the place of the scouts would have behaved much better, but then a sufficient number of soldiers could never have been gotten so close without being discovered. Daylight before the end of the skirmish might have changed matters somewhat, but when there was light enough to see, the band had all escaped and were scattered through the mountains, and the scouts, worn out by eighteen hours continuous marching, were no longer able to follow. It would have been useless to do so anyway, for once aware of our presence there would have been no chance of catching the hostiles until they had again settled down.

From what I saw of the Chiricahua scouts on this occasion, and subsequently when we had talks with the Indians, I am satisfied that, though they fired a good many shots, yet they had little desire to kill, in spite of their wish to see the war ended by the surrender of the renegades. These men worked too hard and were too faithful under temptation to give any reason to suspect them of treachery. But it does not seem unreasonable to believe that they did not strongly desire the death of people belonging to their own tribe, They had not only been their friends, but some were relatives. Moreover, in their eyes the hostiles had committed no crime, for they themselves had likewise been on the warpath. They wanted peace, but not at the expense of much The White Mountain scouts were too much bloodshed. afraid of their Chiricahua brethren to oppose them, so they have not been considered in the above statement. It was one of the many difficulties of General Crook's task that, at that time, there seemed to be no one except these Chiricahua scouts who could follow the hostiles to their retreats in this unknown region.

Disappointment at the result of the fight was, however, soon forgotten in the search for food. Supplies were not lacking, but the white men, exhausted by their long march

without food, found little to tempt them in the lean horse meat without salt, and the roasted heads of mescal which lay around the abandoned camp. The meat, toasted on ramrods, was about as satisfactory as pieces of gunny sack. while the sweetness of the mescal soon produced nausea. The exhaustion of the command was shown by the way the men threw themselves anywhere on the ground to sleep. Some scouts were sent back to bring up the party with the pack-mules, but they went to sleep on the road and nothing was heard of the train. In the afternoon an old squaw came in with a message, saying that Nachez and Geronimo wanted to have a talk outside the camp. From what she told him, Captain Crawford believed that they were ready to surrender: the correctness of his belief was shown by statements made by these chiefs to an officer eight months later, when on their way to surrender to General Miles. The absence of the interpreter, however, compelled a delay, and the meeting was appointed for the next morning. The squaw reported that her people were without food, begged some for herself and departed, leaving us very hopeful for the morrow. Having now nothing to fear from the hostiles, and being worn out, the scouts relaxed their usual vigilance, and all lay down to sleep by the side of the big fires, which had been built to keep off the bitter cold of the night, which caused much suffering. All the white men and most of the scouts were without blankets or covering of any kind. A heavy fog made the morning of January 11th very obscure and, just as it was getting light enough to see, the Indians shouted out that Mexicans were coming. Lieutenant Maus, Chief of Scouts Horn and I, who were awake at the time, ran forward to prevent any trouble, at the same time calling out who we were. But shots from the advancing party drove us into the rocks, where the scouts had taken refuge. Some of them had commenced returning the fire, but this was soon stopped.

Our camp lay on the left bank of the Haros River, which was in sight, and was about fifty miles southwest of Nacori. The ridge on which it was located fell off abruptly to the river side in a high, rocky bluff, along the edge of which ran a line of big rocks; outside of these rocks was an open

space containing a few scrubby trees. We had nearly all been sleeping in this open space, but the firing caused it to be speedily vacated. In the dim light we could not tell who our assailants were, but an idea soon began to prevail that they were Major Davis's scouts who had taken us for hostiles. The thought of being killed by our own friends was agonizing, and we loudly called out the names of the officers on duty with Davis's battalion. In a few minutes the firing ceased and the voices of Mexicans were heard crying out. Horn answered in Spanish, and a small party appeared in the open space near us. It had now grown light and the white men showed themselves, while Horn called out to the leader of the band, then about twenty-five yards from us. The scouts still lay hidden in the rocks; they did not trust Mexicans.

Captain Crawford had been asleep when the first alarm was given, and it was not thought necessary to stop and wake him. When the firing began he, like the rest, ran into the rocks. He now appeared, standing on a high rock, conspicuous above every other object. It is impossible to tell how he viewed the situation, though he must have known that in so exposing himself he ran a great risk, no matter under what circumstances the attack had been made. Thinking, no doubt, that by exposing himself to full view in his uniform, he might save us from being again attacked, he did not hesitate, but climbed the rock and stood waving a white handkerchief in token of peace. In a moment a single shot rang out, followed by a volley. Crawford fell, struck, the scouts said, by the single shot. The Indians returned the fire and, for several minutes there was a hot fight. Horn was wounded by the leader of the Mexicans, who was dropped dead where he stood by a Chiricahua named Bender, who lav at our feet.

The fall of Crawford was not known at first to anyone except some scouts near him. Going to him, as soon as the news became known, he was found lying senseless at the foot of the rock with a ghastly wound in the side of his head, and his brains scattered over the ground near by. Some Indian had bound his head with a handkerchief, and

the man who had shot him was already lying dead not twenty five yards away. The captain was given such aid as was possible at the time; and then our attention was turned to the puzzling position in which we were placed.

The command had fallen to Lieutenant Maus, the next in rank, who had to choose between continuing the fight or terminating it as soon as possible by acting strictly on the defensive. The latter course involved two considerations. The first was that, if the Mexicans believed us to be hostile Indians, we could defend ourselves until we could make them understand who we were. On the other hand, if they really knew us, we could demonstrate to them our ability to defend ourselves and show them how useless it was to keep up the fight. There were many good reasons why the offensive should not be taken, the principal one being the doubt that then existed as to whether we were being attacked by mistake or not. The first attack seemed to be due to a mistake. During the progress of the second, there were no means of determining whether the mistake still existed or not. As one looks back at any affair, things have a different appearance to him, and he wonders why he did not see them in their true light at first. In this case many incidents tended to show that the Mexicans were not acting in good faith. But at the time little thought was given to that: for we were under fire, and the situation was so unexpected and puzzling that every point was not given due weight; in fact, outside of one's individual experience very little was known. Afterward, when the different stories were put together and the ground looked over, calm reflection made us believe that the second attack was no mistake. It was not until nearly two days after the fight that the treacherous capture of Lieutenant Maus and the interpreter, Concepcion, removed all doubt.

The situation was such, however, that had we then certainly known that we were being intentionally attacked, there would have been little choice about our course. The Mexicans were evidently much superior in numbers—two to one it turned out. They occupied a line of hills from three to five hundred yards distant that commanded the ground be-

tween us and afforded them a very strong position. At this time we were so far down in Mexico that it afterward took three weeks marching to get us back to the border. The Mexicans were in their own country, and our only dependence was on the scouts, who were so hated, both as Apaches and also as American soldiers, that there would have been no difficulty in securing reinforcements against them unless some amicable arrangement was made. We were entirely without rations and almost without ammunition; to have tried to fight our way out of Mexico would have meant that the command would have had to scatter and make its way home as best it could. This would have made it necessary to abandon our wounded, and probably all the pack trains that were scattered through the mountains on their way to us. Had we not made peace there could have been little doubt that the Chiricahua scouts would have joined the hostiles, who were then in sight across the river looking on.

During the fight a hurried consultation was held between Lieutenant Maus and myself, in which these points were touched upon. We did not feel sure of the meaning of the conduct of the Mexicans; we had not given up the hope that the hostiles would surrender after all, and we did not wish to abandon the attempt to bring them in. So much had been sacrificed that we felt it our duty to continue the effort, especially as there still remained a hope of success. These reasons have been given fully, because there has been some criticism on the conduct of the command in this affair among both army people and civilians, who seem to think that all we had to do was to attack the Mexicans in their position and avenge Crawford's death. Their judgment has been hasty and unjust. They have not put themselves in the place of officers suddenly called upon to face a situation unparalleled in the history of the army; in which there lay no alternative between the course adopted and ruin; and which would have involved the betrayal of the trust reposed in those officers had they tried, with the knowledge they then possessed, to assume the role of avengers.

Our course determined upon, there still remained the task of conducting the defense, at the same time controlling

the fire of the scouts and continuing the calls to the Mexicans to stop firing. The party that had advanced so near us was soon disposed of; but the main body kept up a heavy fire from the hills, and several attempts were made to flank us, which were, however, frustrated by the scouts. We were strongly posted among the rocks, but the position was entirely open in rear, and would have been untenable had the Mexicans succeeded in getting a party on that side. shots finally becoming less frequent, we could plainly hear their voices as they called to each other, and their failure to answer us began to be very suspicious. Finally they replied and, when the firing ceased, Lieutenant Maus and Horn went out to meet a party half way. An understanding being reached, quiet was restored, and we looked after our wounded. Captain Crawford's case was seen to be hopeless; his wonderful vitality alone prevented his instant death. On examination, one arm was found to be broken near the shoulder. the result of his fall from the rock. One scout was found to be badly wounded through both legs. Two others had slight wounds. Horn was suffering from an ugly flesh wound in the left arm. We had been very uneasy about the party with the mules, but they arrived soon after the close of the fight, bringing rations and other supplies. They had been on the way to us when the firing began, and were then close to the Mexican position. The packers and scouts refusing to proceed, they had taken refuge behind a hill and, fortunately, had not been discovered.

Parties of Mexicans came over to carry off their dead, four of whom lay in our camp, their major and a lieutenant being among them. It is not known how many more were killed. The scouts always claimed at least seven in all. Five men were known to be badly wounded, as Dr. Davis dressed their wounds; some of them he thought would probably die.

Looking over the ground and hearing the different stories, we saw that there was little cause to believe that the Mexicans thought we were hostile Indians when they shot Crawford. The man who fired the fatal shot was just twenty-eight paces distant; the Captain had a brown beard and wore his uniform, so that he looked altogether unlike an Indian.

The experiences of Lieutenant Maus, Chiefs of Scouts Horn and Harrison, and of Hospital Steward Nemeck, likewise confirmed us in our belief. But all lingering doubts were dispelled by the conduct of the Mexicans on the 12th, when they treacherously captured Lieutenant Maus and Concepcion, and compelled them to ransom themselves with six mules. That plunder was their object in attacking us is certain. They saw only a few white men, and the fire of the scouts was so weak at first that they had no reason to believe us a large party.

Our assailants were not regular troops, but were a body raised in the State of Chihuahua to fight the Indians. They had been seventeen days on the road, and had with them no animals except a few burros. Their rations and blankets were carried on their persons. They were a hard looking set; dressed in cotton clothing and wearing moccasins, some of them rawhide sandals, they had little appearance of being soldiers: but at the same time they seemed well suited to following Indians in a rough country. A temporary, and perhaps irresponsible organization, they would, if successful in killing us, have had little trouble in evading all responsibility for their acts. The locality of their crime would have made the detection of the perpetrators almost impossible. Their version, as published in official reports, shows that they would not have been wanting in excuses. They sturdily claimed that we were in league with the hostiles; that they had been following our trail for days, and that the mules (all marked U.S.), taken as ransom, had been stolen by the Indians from Mexicans. With regard to their following us, it is only necessary to say that their trail, which we saw, came directly from the east, while ours came from the west: they had never followed our trail at all, but had been guided to us by the light of our fires.

It has been said that the hostiles were spectators during our fight with the Mexicans. How they must have enjoyed it! As their enemies were engaged in deadly strife before their eyes, it must have seemed that Providence was looking out for them, and no doubt crafty old Geronimo took advantage of the situation to work upon their superstitious feelings, and to encourage them to follow still further their bloody career. It must strike us, too, that it was a strange mischance that caused these two commands to meet at this particular time, and in a country perhaps never before traversed by similar parties. Different as they were, either might have done good work but for the presence of the other.

The experiences of the expedition after the fall of Crawford were strange and interesting; but we will not attempt to tell of them, for the story is long and complicated. We cannot, however, lose sight of it for a few days longer. though nothing except a brief and incomplete outline of events will be attempted. The camp was moved a few miles on January 13th, and no more was seen of the Mexicans. Negotiations with Geronimo were reopened, which resulted in the surrender of part of his band, and the promise of the remainder to meet General Crook on the border, which they did in March. For many reasons the command was obliged to return to the United States, and its march was continued till the supply camp at Lang's Ranch, N. M., on the boundary line, was reached on February 1st. Orders were given by General Crook for a similar withdrawal of Major Davis's battalion from Mexico and, for a time, operations were suspended.

The transportation of our wounded was a serious trouble. Incessant rains not only increased the discomforts already existing, and caused much actual suffering on account of the lack of shelter and clothing, but it also made the rough country almost impassable. The litters, composed of canvas stretched between bundles of canes, had to be carried by hand; the canes were so pliable that the litters were clumsy affairs, requiring eight men to carry one of them. Then the moccasins went to pieces in the wet and left many of us barefoot in this stony region. In a few days, however, Daly's train met us and brought us more comforts. A new litter was then made for the Captain, and as pine poles were now available they were substituted for the canes, and one end of the litter fastened to a mule; on account of the rough trail the other end was still carried by hand. The badly

wounded scout was rigged upon a mule and caused but little more trouble.

A week went by without any sign of consciousness or of suffering on the part of Captain Crawford who, gradually growing weaker, on the 18th of January passed away so quietly that the end was not perceptible to those watching by his side. Four days later his body was deposited in the dreary little burying ground at Nacori; the hope that this was only a temporary resting place was soon realized by the action of General Crook in sending a suitable party to bring his body back to the United States. He was finally buried at the home of his brother at Kearney, Nebraska, where a monument erected by his brother officers now marks his grave.

The killing of Captain Crawford gave rise to much feeling against Mexico and some talk of war upon that country. The matter was taken up by the State Department, but was finally dropped without action on the part of our Government. The reasons for this course were doubtless good, but it is much to be regretted that they have never been made public; for there is a belief that our country has allowed one of its best officers to be murdered while doing his duty, and has failed to take steps to punish his assassins.

The attack of the Mexicans not only caused the death of a valuable officer, but it also prolonged the resistance of the hostiles for eight months. There is little doubt that they would have surrendered in January but for this affair; it was September before they finally did so. In his report General Crook says: "There is reason to believe that had he (Crawford) lived, he would have received the unconditional surrender of Geronimo's and Nachez's bands;" and again: "He was thoroughly known to all the Indians, and had their confidence. It is believed that he was the only white man besides myself, who could have induced the hostiles to surrender." When we reflect that after January probably more than a hundred people were killed by these Indians, and when we also consider the incalculable losses in property, both to the government and to private parties, and remember that during all these months no one was safe

in a region containing hundreds of square miles, we can realize that the importance of that little fight is not to be measured by the number of slain.

It would be well if all of us could keep in our minds the memory of this devoted and chivalrous soldier, whose whole life was one long sacrifice, and whose death was the direct result of his efforts to save others. Such characters are not common. Let us try to remember this one as our ideal of what a true man should be. Though we may never be called upon to face difficulties of the kind that confronted him, yet the elements of character that enabled him to overcome them and to win the love and respect of all who knew him, will tell in all walks of life; and though such men sometimes fail, yet the name they leave behind them is worth far more than the greatest success.

THE MISSION OF THE SERVICE MAGAZINES.

BY LIEUTENANT HUGH JOHNSON, FIRST CAVALRY.

ONE, a few, perhaps a majority, possibly even all, of the following assertions will be admitted by students of military affairs:

(a) The army is too small.

(b) The army is rigid and inelastic.

(c) Under our political conditions it should be the most elastic and facile system in the world.

(d) Under modern conditions, trained officers and men and adequate material of war must be on hand before a conflict begins.

(e) We have none of these desiderata on hand.

(f) War is always possible, even for us.

(g) A certain war is even probable.

Or for the sake of condensation and conciseness,

(a) The United States is unprepared for war.

(b) War is not a remote possibility.

In the present stage of civilization, it is generally admitted that war cannot be eradicated, therefore the state of affairs asserted in the second sentence cannot be changed. But the state of affairs asserted in the first sentence can be changed.

In order to change it, it is necessary to examine it very closely, and to arrive at a conclusion as to why it exists—why this nation is unprepared for war. Having determined the causes for this state, it is then necessary to eradicate or change them so that a new state—a state of preparedness may exist.

For professional men, who have devoted much time and thought to this subject, it is not necessary to proceed to an exhaustive study of the history and causes of the military policy of the United States. It is generally admitted that the lack of an adequate defense is due to a traditional unwillingness to expend money for so costly a national possession. Of course the cause goes a step deeper than this, for Congress is obliged to appropriate funds to any reasonable extent for any pressing national necessity. That deeper step brings us face to face with the two fallacious assumptions upon which rests our policy of non-provision of defense.

1st. Our isolated geographical position absolves us from the onus of preparedness.

2d. A large standing army is dangerous to the liberal institutions of a free people.

If these two statements are correct, then the condition of affairs is as it should be and we need make no preparation for war. By the first of the statements the army is "reasoned" out of countenance. Upon the second rests its traditional unpopularity. Because of these two assumptions we are unprepared.

But if these statements are incorrect, then they constitute false national policy, that is certain to reap—as we believe it has already reaped—a harvest of national disaster, and it is the duty of some person or set of persons to explode them as wicked and dangerous theories—to cancel them and their long train of consequences from the policy of the United States.

They have existed for a hundred years triumphant over various half-hearted attacks upon them, and yet if they are false, they are eradicable.

Having traced unpreparedness to its eradicable causes, there remains to ascertain upon whom falls the duty of eradicating them. On whom then falls the duty of combating these statements and even of replacing them, perhaps as follows:

I. Our geographical position gives us an advantage of from five to twenty-five days, in defensive war, but handicaps us by that length of time for offensive war, and in no case renders our position impregnable or even safe. 2. Our military history has shown that an adequate standing army is the *only* efficient safeguard of the liberal institutions of a free people.

A cursory glance through the Constitution and history of the United States would give us this answer:

The duty and responsibility of national defense is the province of the statesman.

But is this answer the correct one? Is not this conclusion false?

Under our system of government, after all is said and done, Congressmen are but the representatives of the people. They reflect only the animus and the opinions of their constituents. For this reason they have sometimes even been accused of unfaithfulness to their own opinions and called cringing servants of a majority of their constituents. But is this not as it should be? Was not the government designed so? If, for instance, a representative believes in the restoration of the canteen, as a lasting benefit to the army, and votes against it because he knows that a recorded vote for it will stir up dissension in his own district among people who perhaps do not understand the merits of the case as well as he—is that man to be censured for bowing to a system that was designed by the framers of the Constitution?

If popular tradition and political inhibitions cause the greater number of people in the congressional districts and States of the Union to cry down army appropriations and legislation, is any statesman of any condition whatsoever to be blamed for exercising his proper functions as a representative of the people who placed him in office? There can be little question here; the conclusion takes us a little nearer to the true seat of responsibility and very near to the apparent one, and we should say at this stage that the duty of providing an adequate defense rests with the people of the United States.

But is this conclusion the true one?

For instance, are the people responsible for the existence of proper laws promoting the public health, for sanitary regulations, or the enactment of quarantine laws. Is not rather the medical profession responsible? Do not the statutes

concerning purely technical points of law rather reflect the integrity of the lawyers than that of the people? Are not mining laws evolved from the experience of miners, navigation laws of sailors, forestry laws of specialists in forestry? True, through their representatives, the people enact those laws, but after all, are not the specialists and not the laymen responsible for them? If it is so, it is hard to escape the conclusion that the duty of providing and maintaining an adequate and efficient system of national defense that shall fit our peculiar conditions of government, meet our peculiar demands, and of itself remain an institution popular with the people of the United States, rests with the professional soldiers of the army, and with them alone.

If this conclusion is correct, and it can not be escaped, it would follow that the same duty had existed for a hundred years, and if it is admitted that for a hundred years the national defense has been inadequate, there exists at least an argument for *some* change.

According to this view, there is, to say the very least, a work prepared for the army.

It would appear that, on a small scale, if the army as it exists is rigid in construction, not designed for the assimilation of great masses of raw troops that shall swell it to the two or three or four or five hundred thousand men with which modern battles must be fought, or to the million men that must decide the wars of this latter day, if it is not sufficiently officered for mere peace time demands, and not at all prepared to furnish men of technical education to train and fight new men in time of war; if there is not on hand equipment for those unnumbered new men, or even the skeleton machinery of that great army, if - but the ifs represent all the criticisms of the present system that are frankly admitted in the army to-day-if the ifs can be affirmed, then, since nearly all those things mentioned are matters of strictly internal administration, with which even the most obstreperous law giver rarely concerns himself, it is hard to see why the remedies were not applied years ago. Those things at least could have been considered and improved within the army itself, and without an active campaign before Congress.

Of course, efforts looking toward this end have been made again and again, but the very fact that they produced no results, shows that they were half-hearted efforts. Also for them, it might be said that with the means at hand the *proper* changes could not have been made and it was more expedient to wait (a hundred years, it seems) until sufficient means were at hand. But a close examination would seem to reveal the fact that our present system is so repugnant to our national institutions that no amount of mere manipulation of it as it stands will produce the desired result.

In its hundred and thirty-two years of existence, this government has not evolved a true, fixed military policy, but (and this supports the contention that the army itself is responsible for its own condition) neither has the army evolved a military policy. It would be fairly safe to say that in no man's mind is there any very clear and lucid idea of just what the army of the United States ought to be. No well defined and matured plan for the organization of an American army that could meet all demands of peace and war, remain of itself a popular institution (by which attribute only can it hope to come into being or to exist, once created) and yet not diminish in efficiency. It would be absolutely safe to say that the army has not arrived at the conception of any such ideal.

The organization of armies not yet created *is* clearly and well defined, but there is absolutely no idea of the source of their existence. All the faults of the present system are admitted, and yet nothing is advanced to replace it. If the army is given a chance to expand, it expands by the addition of batteries, regiments or companies—all according to the old and condemned system and all added like lean-tos built on a rambling and decaying old farm house to fit the periodical family increase.

These additions too, are conceived and consummated within the arm of the service that happens at the moment to have zeal enough to demand and work for them. A foreign-designed cap is clapped on an American head where the peculiarly American and admirable campaign hat sat so well before, a battery is tacked on to the army here, a small

change in policy planted there—not because each one of these things is a step toward the final aim of an accepted and well conceived policy, but simply as the fad of a few persons, or the expression of the ambition and partisan feeling of an arm of the service.

How can the nation evolve a military policy when the army itself has none? And why has the army none?

The tendency of any great system for the utilization of individual effort for the accomplishment of a great and continuing purpose, must, among the cogs and ratchets of the machine, be toward apathy—apathy toward the aim of the system in the big. The men who constitute those cogs and ratchets, necessarily lead a narrow and specialized existence. Their lives are fixed in well defined and scarcely changing orbits, and their horizons are limited to the work in hand, until the great purpose of the system (and therefore of their own efforts) is entirely lost to sight.

Such a system is the army of the United States. Every custom and tradition, every law and regulation, every opinion expressed or implied, makes toward apathy. The steady, if slow, flow of promotion to brilliancy and mediocrity alike, the absence of other reward save virtue's own for work well done, the absence of punishment for aggressive indifference—all these things, while they are safeguards to a system of justice that no sagacious person could wish removed—neverthe less make for an apathy so dark, dense and profound that it is hard to escape the conclusion that the army itself, however praiseworthy may have been its work at crises, has failed in the primal object of its existence for a hundred and thirty years.

For after all, the very raison d'etre of men who have received the benefits and training of the military system, is that they may provide for the nation to which that system belongs a bulwark of defense.

A circular letter requiring the snap judgment of every officer in the army as to the purpose of the life he had dedicated to his country would not receive that dictum as the reply in ten cases. And there we see the narrowing horizon, and the blindness to the Great Purpose incident to living in

a machine. And there, too, we find the answer to the question—Why has the *army* no military policy?

The final aim of such a policy is as simple and seeable as all great principles. It can be expressed in as many words as a man's hand has fingers—the better perhaps that he may always have it before his eyes, to provide adequate national defense.

Some scheme must be evolved, criticised, clipped, assaulted and beaten into symmetry. Then it must be accepted in all its farreaching provisions by the service as a whole—the army must be unified upon it, and it must then be pushed aggressively to its consummation.

The first step of that campaign must be the eradication from the public mind of those two dangerous and wicked bits of fallacious sophistry, the geographical isolation folly, and the liberal institutions bogy.

How have these two stumbling blocks to national progress grown up? School histories, inherent national conceit, ignorance of world politics and conditions, false and hysterical "patriotism," but principally and in a word, dense ignorance.

Political histories tell little of the military aspects of historical situations —a battle is won or lost — the consequences are dilated upon as they affect the States, but the causes for the actual defeat are forgotten. School histories make this fault an aggressive argument in a false direction—especially American school histories, padded as they are, with complimentary, "brave boys in blue," "embattled farmers of Lexington" and "patriot defenders of hearth-stones," with a complete hiatus as to the disgraceful exhibitions that have so often splotched the national sheet.

This, if nothing else, engenders that deplorable American conceit by which one sturdy farmer with a good elm club is believed to equal a squad of "Dutch" soldiers, and that also grows from a popular ignorance of world politics that is happily disappearing as the country enters the congress of the powers. But all these things simmer down to an ignorance of actual conditions that it will be the duty of

the army to remove. There should be a bureau of the General Staff for this purpose alone.

Whatever may be the solution of the problem—perhaps it may be the creation of an immense skeleton first line, fully equipped for its war strength, with rifles and guns, and ammunition and wagon trains, and consisting of regular troops, with national volunteers, replacing the militia, as a complement to the skeleton organizations in regular service—national volunteers who exist in peace as in war, the whole with a full quota of trained officers and materiel—perhaps it will be, well, any other reasonable and feasible scheme—but whatever be the solution, it will never appear until the nation understands its necessity, and that will never happen until the army recognizes its aim, formulates a policy and lives up to it; and here is the mission of the service journals.

The task must never be believed an easy one. In the apathetic stage, these periodicals are prone to degenerate to the status of mere literary catch-alls for the spasmodic and ill-considered productions of some five or six thousand possible contributors, for dry and profitless rehashes of old and thread-bare themes, for the inconspicuous stories of times long since past and gone—in short they may reflect that deplorable enchanted palace in which we all drowse awaiting the touch that shall finally awaken some sleeping beauty within its gates.

Opinions of recognized leaders should be invited and insisted upon. Criticisms should be welcomed, but the policies once formed, should be aggressively supported and the carping contributions of the dissatisfied minority ruthlessly edited out of existence if necessary for the unity of the whole.

In those journals, and in them alone, lies the hope of change, but if, for the nation to have a military policy, the army must first evolve one—for the army to have a policy the journals must evolve one, well defined, brilliant and aggressive.

HOW MAY PUBLIC RESPECT FOR THE UNIFORM BE INCREASED

By CAPTAIN M. E. HANNA, THIRD U. S. CAVALRY.

M UCH has been written on this subject from time to time in the service journals, and many solutions have been suggested; yet it still remains an aggravating question. It is not because I think my scheme a complete one, or even a better one than others, that I propose it, but because I believe the problem one that requires for its successful solution the combined good points of many plans. It is foolish to expect to break down in a day a prejudice that has been taking root for years. If public respect is to be secured for the soldier in uniform, the united army will have to wage an intelligent and long sustained war against an unreasoning public prejudice, and the campaign should be begun by making a careful search for the causes of this prejudice.

To my mind the principal reason for the lack of respect for our uniform is the generally poor opinion the public has of the soldier. Now, is the soldier's conduct such as to deserve this poor opinion. Yes and no. Yes, in that the soldier occasionally offends against the laws and sensibilities of the community, as do the majority of other people in varying degrees. No, in that these offenses are no more frequently committed by our nation's defenders than by the civilian classes from which they are drawn, if indeed they are as frequently committed by the former as by the latter. But, in the one case, the whole class suffers; in the other, only the individual feels the consequences of his acts. Were soldiers treated likewise, there would be no cause for complaint. We ask for the soldier the same treatment that is accorded the civilian—no better, no worse. We do not claim

that all of the so-called cases of discrimination against our soldiers have been unjust. Occasions are repeatedly occurring when they should be denied the privileges accorded to well behaved civilians. In many cases they would have been denied the same privileges had they been in civilian clothes. Against such discrimination we have no cause for complaint.

But the public does not treat the matter in this way. It does not distinguish between the well behaved soldier and the disorderly one. There are not many of them; it is simpler to bunch them all together in one class and brand them thoroughly good or thoroughly bad. Since there are some bad ones among them, and since it is to these that the attention of the people has been repeatedly called, the latter label has been put on them all. By some this has been done deliberately—in cold blood. By others, and in this class are the great majority of our people, this judgment has been reached in a perfectly natural way. The public forms its opinion from what it sees and hears; from what it is told and what it reads. The soldiers do their work when in garrison: the public hears little about this and sees less. When they are out of garrison it is for amusement; and these are the occasions when the public sees them. The uniform makes them conspicuous. They cannot lose themselves in the crowd. Ninety-nine of them may be orderly and well behaved, but that fact passes unnoticed. The hundredth commits some indiscretion, and every paper in town devotes a half column to him with bold headlines; the public wants to hear about this: it helps to sell papers; so the occurrence is magnified, the account garbled; the public reads and judges innocent and guilty alike. John Jones, a civilian, walking up the street, meets a staggering soldier. "Another drunken soldier" is his comment. Continuing on his way, he meets one drunken civilian after another without the sight exciting any comment at all.

The soldier has not been given a square deal. He has been judged by a jury not in possession of all the facts. Public condemnation of individual soldiers may often be warranted, but damning the whole enlisted strength of the army because of the acts of a few individuals, is as wholly

unjust as it is common. Gradually there has taken root in the public mind the opinion that our soldiers are vicious. We know that opinion to be erroneous, ill-founded, and not warranted by their conduct. We believe that that opinion would be changed did the general public but know them as intimately as do their officers. But we are dealing with a condition, not with a theory, and it is not practicable for the public to know them thus intimately. It is worse than useless to tell the public that they are no worse than the majority of mankind: the public has formed its own opinion on that point in its own way: it thinks they are worse, and there is no reason to believe that it will cease to think so, so long as it sees the worst side of the soldier and does not see the other side—the best side, when they are at work, when they are at play enjoying manly sports with boyish enthusiasm, when they are in their reading rooms which are filled with clean, wholesome literature, or in the gymnasium, the dance hall, the Y. M. C. A. and the chapel. The one is being constantly thrust before the public's eyes, the other, it is barred by circumstances from seeing.

If we are correct in our statement of the opinion the public has of our men, and in our analysis of the reasons for its existence, the question at once arises: How is this opinion to be changed? The answer is not difficult to find. When the soldier appears in uniform among civilians his conduct must be above reproach. If the public cannot see the best in him it must not be permitted to see the worst. long as the public is ready to condemn a score of our men because of the misdeeds of one, that one must be kept out of the public view. If the majority of our men are lawabiding, respectable citizens, let the public see them, but conceal from it the small minority of more or less turbulent characters that have brought all this disgrace upon the service. In this there is no thought of deceiving the public; the obiect is to place within its reach such convincing proofs of the general good character of our men that it will be compelled to correct its mistaken opinion.

The conclusion is forced upon us that if there is a remedy for this condition, it is to prevent the uniform from being disgraced by the wearer. When the uniform is seen it must be on the back of a well behaved, self-respecting man. The thinking public can not be forced into an admission that a rowdy is a gentleman. Let the man treat his uniform and profession with respect and the public will treat him with respect. Let him disgrace it and he becomes an outcast. If the conduct of our men when in uniform is above reproach, that uniform will speedily become a badge of honor that will invariably entitle its wearer to every courtesy and consideration ordinarily accorded the well behaved civilian; it will become a guarantee for manliness on the part of the wearer, and discriminations against the soldier will be replaced by marks of preference.

After all, our soldiers are but men; they have the same temptations and are governed to a large extent by the same passions as are other men. Their conduct will be similar. As well expect water to run up hill as to expect the conduct of thousands of young men to be above reproach for an indefinite period. Normal civilians are not angels; neither are normal soldiers. From the very nature of things their temptations are greatest when they are on pass: yet this is also when they are most closely associated with the civilian. They have been robbed of their club, and appetites that were harmless in the canteen run riot in the grog shops and low dives. They are the victims of circumstances that conspire to put them in a discreditable light. In garrison, duties occupy much of the man's time and discipline is ever present; but away from the restraining influence of work and discipline, oftentimes crowding into a few hours the dissipation that a civilian spreads over days and weeks, he disgraces his uniform and brings discredit on scores of his innocent comrades. Can this be prevented, or if it cannot, can the effect it has on shaping public opinion of the enlisted men be avoided? The task looks like a well nigh impossible one; but to deny the practicability of accomplishing it is to throw up our hands and admit defeat.

Let us consider, then, how this is to be done. It is not difficult to point out the men who are bringing the uniform into disrepute, yet we permit them daily so to do without thought of punishing them for the offense. They may be punished for engaging in a street fight, for drunkenness, for absence without leave, for "conduct to the prejudice of, etc.," but how many of them are tried for the specific offense of disgracing the uniform. Greater respect by the civilian for the uniform of the soldier! one of the crying needs of the day. Yet what are we doing, actually doing, to encourage and compel the wearer of that uniform to respect it? What is there in our administration solely intended to build about the uniform a barrier of sentiment that will protect it from such disgrace? Nothing. If this sentiment is to be aroused we must create in the mind of the enlisted man the belief that permission to wear the uniform when out of garrison is one of the greatest marks of official trust and esteem that can be bestowed upon him by his superiors; we must choose the men that are to be granted this permission with greater care than we choose our non-commissioned officers; and those men who are denied this privilege and honor must be made to feel the disgrace of their position.

For the purpose of regulating this abuse of the uniform and determining who shall be allowed to wear it when off duty, the enlisted strength of any command may be divided into three classes, as follows:

ist. The men with well settled, well established good characters, whose conduct is exemplary, who may be trusted implicitly without fear of their imposing on the confidence placed in them.

2d. The men who, while not vicious, are full of youthful, animal spirits, fond of occasionally having a good time in their own way; men who do not deliberately embroil themselves in difficulties, but who, nevertheless, are continually getting into trouble through one cause or another; men of good intentions but easily led away by temptation; in short, that large class of aimless, careless spirits, that can be reached and corrected in various ways; some by encouragement, some by admonition, and some by punishment.

3d. Those vicious men who have little self-respect and still less respect for the service and their uniform; who are constantly getting themselves into disgrace and are fre-

quently leading others into temptation; the men who never should have been enlisted; who are a constant menace to the reputation of the service, and give it but little in return.

The men of any command naturally fall into these three classes—the excellent, the fair and the bad. A captain who has served with his company for a year can so classify his men with unerring accuracy.

The men in all three of these classes should be allowed to wear civilian clothing when on pass if they so wish.* Let us look at this matter squarely and boldly. To refuse even the best of our men permission to wear civilian clothing when out of garrison, but not on duty, is to compel some of them sooner or later to do one of two things—wear civilian clothing in spite of the order to the contrary or wear the uniform and bring it into disgrace. Would the officer's uniform be given the unqualified respect that it receives to day were he bound by an iron clad rule and required to wear it at all times? The question is one to reflect upon.

The men in the first class may be trusted to wear the uniform when among civilians with the dignity and honor it merits. In this work of creating respect for the uniform their assistance can be counted upon. Many of them have felt with chagrin the sting of that disrepute into which the service has been dragged, and they will be eager to give their active support to any plan which promises their uniform the respect and themselves the consideration that they know they deserve. These are the men that the public should see, and they should be encouraged in every way to wear the uniform at all times; and, partly to accomplish this purpose, partly to reward the men, and partly to encourage others to number themselves in this class, they should be given leaves and passes and shown other indications of official favor so far as this is otherwise consistent with the efficiency of the service.

The men in the second class are a variegated lot, grading

^{*}This would undoubtedly require some provision whereby the enlisted men may be furnished with civilian clothing, but this is a matter of such minor importance when compared with the great vital question of respect for the uniform as scarcely to be worthy of comment.

from the man who just escapes being vicious to the man who just misses being excellent. The manner of treating them must necessarily be as different as are their characters. In the beginning this class will undoubtedly number by far the larger part of our men. The privilege of wearing the uniform must be granted them sparingly and with the greatest caution. Every care compatible with the avoidance of injustice must be taken to place this trust in only those who merit it, and the abuse of this trust must be appropriately and unhesitatingly punished. Just as the first class is shown unusual special privileges, so the men of this second class should be denied such privileges according to the circumstances surrounding the reprehensible conduct of each individual when in uniform. As far as practicable, a pass for the man in uniform should be had for the asking, while the pass for the man in civilian clothing should be more difficult to get.

The third class is easily disposed of. The men of this class have shown by repeated offenses that they are wholly unworthy to be trusted, and should be denied all privileges until, by good conduct and devotion to duty, they have redeemed their reputations. True, many of them may desert, but we cannot allow ourselves to be deterred, in this effort to improve the service where improvement is vitally needed, by the fear of desertion. Besides, this is another distinct evil, the correction of which constitutes a question entirely independent of this subject.

In all this there should ever be kept fresh in the mind of the soldier the single idea of respect by him for his uniform. Punish him, not for drunkenness, not for disorderly conduct, but for disgracing the uniform by being drunk and disorderly when dressed in that uniform. If we cling tenaciously to this great work of reform in our service and mass our united energies in one vast effort to effect it, neglecting no trifle as unimportant, but gathering about this central idea every minor reform that may contribute to the accomplishment of our object, we lay the axe on the very root of the evil—lack of respect by our soldiers and sailors for the uniform they wear.

RIGHT OF TRIAL OF SOLDIERS IN THE PHILIPPINES.

(PROBLEM No. 9, DEPARTMENT OF LAW, ARMY STAFF COLLEGE.)

BY FIRST LIEUTENANT RHEES JACKSON, TWELFTH INFANTRY, AND FIRST LIEUTENANT RONALD E. FISHER, SEVENTH CAVALRY.

NDER present conditions, a United States soldier on guard at a detached post near Batangas, P. I., shoots and kills one of three natives approaching his post. The soldier claims to have fired in performance of his military duty and in self-defense, under a reasonable apprehension that the natives were about to attack him with deadly intent. Nevertheless the civil authorities charge him with assassination in violation of the Philippine code (murder under our law), and he is brought before the court of First Instance at Batangas for trial.

May that court lawfully try and determine the case?

* * *

I. An American soldier in the Philippine Islands can not be tried by the civil courts of those Islands for an act done in the performance of his military duty.

Any person who is in custody for an act done or omitted in pursuance of a law of the United States, or who is in custody in violation of the Constitution, or of a law or treaty of the United States, may, under provisions of Section 753, R. S., be brought before an United States court, or judge or justice thereof, by a writ of habeas corpus, and such court or justice may by an examination into the merits of the case make final disposition of such prisoner.

The necessity for the above law is to be found in the fact, as expressed in the opinion in Martin vs. Hunter (1 Wheat. 363), that—

"The general government must cease to exist whenever it loses the power of protecting itself in the exercise of its constitutional powers * * * it can act only through its officers and agents. * * * If, when thus acting, and within the scope of their authority, those officers can be arrested and brought to trial in a State court for an alleged offense against the law of the State, yet warranted by the Federal authority they possess, and if the general government is powerless to interfere at once for their protection * * * the operations of the general government may at any time be arrested at the will of one of its members."

Mr. Justice Bradley in exparte Siebold (100 U. S. 371, 394) says:

"We hold it to be an incontrovertible principle, that the government of the United States may, by means of physical force, exercised through its official agents, execute on every foot of American soil the powers and functions that belong to it. It must execute its powers, or it is no government. It must execute them on the land as well as on the sea, on things as well as on persons. And, to do this, it must necessarily have the power to command obedience, preserve order, and keep the peace; and no person or power in this land has the right to resist or question its authority, so long as it keeps within the bounds of its jurisdiction."

In re Neagle (135 U. S. 1, 76) enunciates the principle that an officer or agent of the United States was not answerable to the courts of California for an act done under the authority of a law of the United States. In the same case, on pages 63 to 67, the opinion holds that no specific statute is necessary to afford the protection of the writ of habeas corpus. Authority inferred under the Constitution, treaties, and statutes will suffice.

The case *In re* Fair (100 Fed. Rep.), (as quoted in the brief of the plaintiff in error in the case of Grafton vs. The United States, page 47), where soldiers whose duty it was to apprehend an escaping deserter, shot and killed the deserter

in attempting to make the arrest, and for so doing were held for murder by the State Court of Nebraska, held:

"If then the petitioners acted under such orders in good faith, without any criminal intent, but with an honest purpose to perform a supposed duty, they are not liable to prosecution under the criminal laws of the State."

In the same brief, page 47, the Lewis case (83 Fed. Rep. 159) is quoted as follows:

"Where an officer, from excess of zeal or misinformation or lack of good judgment in the performance of what he conceives to be his duties as an officer, in fact transcends his authority, and invades the rights of individuals, he is answerable to the government or power under whose appointment he is acting, and may also lay himself liable to answer to the criminal process of a different government. With our complex sytem of government, State and National, we would be in an intolerable condition if the State could put in force its criminal laws to discipline the United States officers for the manner in which they perform their duty."

In the case in question there can be no doubt that the soldier is an officer or agent of the United States. If then, the act charged as a crime was done in the performance of a duty derived from the laws of the United States, the Federal courts are empowered to order the discharge of the accused.

"That there is a peace of the United States; that a man assaulting a judge of the United States while in the discharge of his duties, violates that peace; * * * are questions too clear to need argument to prove them." (In re Nagle, 135 U. S. 1, 69.)

In the same case the court says that it was the duty of the marshal to prevent this breach of the peace even if, in the protection of the judge or of himself, it became necessary to kill the assailant.

If his post is attacked, especially in a country where conditions are so uncertain as in the Philippine Islands, it is undoubtedly the duty of a sentinel to act promptly to insure the protection of government property under his charge and the safety of his command. His general orders require him

to remain upon his post until properly relieved and to take charge of all government property in view. He is immediately responsible for such property, and for its protection is provided with arms and ammunition. If attacked he cannot avoid combat without committing the crime of quitting his post and, in addition, rendering himself liable to punishment for cowardice. The general orders of a sentinel emanate from the President through the War Department. and are in accordance with the powers and duties derived from the Constitution and statutes of the United States. As commander-in-chief of the army under Article 2. Section 2. of the Constitution, the President may make rules and regulations for the government of the army. By Section 8, Article I, of the Constitution, Congress is also empowered to make rules and regulations for the government of the army. The second Article of War, Section 1342, R. S., commands obedience to the orders of superior officers on the part of the soldier. The 30th Article of War makes the offense of leaving his post by a sentinel before he is regularly relieved punishable by death or such other penalty as a court martial may direct. The 42d Article of War states that any soldier who runs away, or shamefully abandons any post, or guard, which he is commanded to defend, or casts away his arms or ammunition, shall suffer death or such other penalty as a court martial may direct, while the 62d Article of War presents a drag net which covers all acts or neglects to the preiudice of good order and military discipline.

The protection of public property is a duty of the executive department, derived primarily from the provision in Article 2, Section 3, of the Constitution, which requires that the President take care that the laws be faithfully executed. Section 161, R S., and paragraphs 200, 662, A. R. 1904, place the responsibility for government property at military posts on commanding officers, and require that it be properly guarded.

In the case before us, it is believed that a writ of habeas corpus could be sued out and the cause removed to a Federal constitutional court. The application should perhaps be first made to the Supreme Court of the Philippines, but if this

court fails to order the discharge of the accused, he is entitled to appeal to the Supreme Court of the United States.

In Baker vs. Grice (169 U. S. 284, 290), an appeal from the final order of the Circuit Court of the Eastern District of Texas in habeas corpus, the opinion says:

"It clearly appears as the settled and proper procedure that while Circuit Courts of the United States have jurisdiction, under the circumstances set forth in the foregoing statement, to issue the writ of habeas corpus, yet those courts ought not to exercise that jurisdiction by the discharge of the prisoner unless in cases of peculiar urgency, and that instead of discharging they will leave the prisoner to be dealt with by the courts of the State; that after a final determination of the case by the State court, the Federal courts will even then leave the petitioner to his remedy by writ of error from this court."

The same case further states that in cases of an exceptional nature, as in Neagle's case (135 U. S. 1) and in re Loney (134 U. S. 372), this course of non-interference has not been pursued.

In the case of Drury vs. Lewis (200 U. S. 1, 7-8), where an officer and an enlisted soldier in the military service of the United States were indicted for murder and manslaughter and held for trial in a State court, the Supreme Court held that the ruling in the case of Baker vs. Grice above was applicable. On page 8 the court says:

"But it is contended on behalf of the government that the State court was absolutely without jurisdiction to try the petitioners * * * because the homicide was committed by them 'while in the lawful performance of a duty and obligation imposed upon them by the Constitution and laws of the United States.' * * * It could not reasonably be claimed that the fatal shot was fired in the performance of a duty imposed by the Federal laws, and the State court had jurisdiction."

It will be seen that this ruling does not alter the right of the accused in the case before us to have the merits of his case reviewed by a Federal constitutional court on a writ of habeas corpus; it merely states the principle that the Federal court should not interfere and discharge the accused unless the case is so exceptional as to require this action, or unless the act charged as a crime can reasonably be claimed to have been performed in pursuance of a duty imposed by the laws of the United States. In all cases, the Federal court must inquire into the merits of the cause, and if it decides in favor of its own jurisdiction, may discharge the accused.

2. An American soldier does not lose his right to jury trial when ordered to duty in the Philippine Islands. He is entitled to trial either by jury or by court martial.

The right of citizens of the United States to trial by jury is one that has always been jealously guarded in the past, as it is regarded as one of the principal agencies by which the freedom of the people has been preserved. It has always been extended to territories and the Supreme Court, in reaffirming this right in Thompson vs. Utah (170 U.S. 343, 347) (a case in which it had been attempted to make a provision of the State Constitution providing for juries of only eight men apply to trial for an act committed before the admission of Utah as a State), quoted approvingly the decision in Callan vs. Wilson, as follows:

"As the guarantee of a trial by jury, in the 3d Article (of the Constitution), implied a trial in that mode and according to the settled rules of the common law, the enumeration, in the 6th Amendment, of the rights of the accused in criminal prosecutions, is to be taken as a declaration of what those rules were, and is to be referred to the anxiety of the people of the States to have in the supreme law of the land, and so far as the agencies of the general government were concerned a full and distinct recognition of those rules, as involving the fundamental rights of life, liberty and property. This recognition was demanded and secured for the benefit of all the people of the United States, as well as those permanently or temporarily residing in the District of Columbia, as those residing in the several States. There is nothing in the history of the Constitution or of the original amendments to justify the assertion that the people of this District must be lawfully deprived of the benefit of any of the constitutional guaranties of life, liberty and property—especially of the trial by jury in criminal cases." "We cannot think," the

court further said, "that the people of the District have, in that regard, less rights than those accorded to the territories of the United States."

It is true that the Supreme Court has said in its opinion in *In re* Ross (140 U. S. 453, 464):

"The Constitution can have no operation in any other country. When, therefore, the representatives or officers of one government are permitted to exercise authority of any kind in another country, it must be on such conditions as the two nations may agree, the laws of neither one being obligatory on the other. * * * And besides, their enforcement abroad in numerous places, where it would be highly important to have consuls vested with judicial authority, would be impracticable from the impossibility of obtaining a competent grand or petit jury. The requirement of such a body to accuse and to try an offender would, in a majority of cases, cause an abandonment of all prosecution. The framers of the Constitution, who were fully aware of the necessity of having judicial authority exercised by our consuls in non-Christian countries, if commercial intercourse was to be had with their people, never could have supposed that all the guaranties in the administration of the law upon criminals at home were to be transferred to such consular establishments, and applied before an American who had committed a felony there could be accused and tried. * * * While. therefore, in one aspect the American accused of crime committed in those countries is deprived of the guarantees of the Constitution against unjust accusation and partial trial, yet in another aspect he is the gainer, in being withdrawn from the procedure of their tribunals, often arbitrary and oppressive, and sometimes accompanied with extreme torture."

It is to be seen, however, that this decision does not apply to the case under consideration. The Philippine Islands are not "another country" in the sense of the above expression. They are under the domain of the United States and governed solely by United States agencies. It is not claimed that the soldier should be tried by a jury composed of semibarbarous Filipinos; indeed, that is what the decisions of the Supreme Court seem to be directed against; but we believe that it is illegal that soldiers should be submitted to the jurisdiction of a one-man court, especially as the judges

of these courts are, in many cases, themselves Filipinos—a race trained in an entirely different system of law and jurisprudence, whose habits of thought are different from ours, and who, having just been subdued by the American soldiers, after a struggle lasting over five years, could naturally be expected to feel only a very mild form of affection for their conquerors.

In the case of Hawaii vs. Mankichi (190 U. S. 197), where Mankichi was convicted by nine out of twelve men composing a jury, as was permitted under the Hawaiian law previous to annexation to the United States, the conviction was upheld, notwithstanding that the trial took place *after* annexation, and that the resolution of Congress by which the annexation was accomplished contained the following provision (same, 209):

"The municipal legislation of the Hawaiian Islands, not enacted for the fulfillment of the treaties so extinguished, and not inconsistent with this joint resolution nor contrary to the Constitution of the United States, nor to any existing treaty of the United States, shall remain in force until the Congress of the United States shall otherwise determine."

Congress, however, had failed to provide any measure to take the place of the form of trial then existing, the legislature of the Islands had adjourned and did not meet until long afterwards. Therefore, the Supreme Court was of the opinion that the form of trial then in vogue must continue until some other had been provided. It said (page 217):

"It is not intended here to decide that the words 'nor contrary to the Constitution of the United States' are meaningless. Clearly they would operate upon any municipal legislation thereafter adopted, and upon any proceedings thereafter had, when the application of the Constitution would not result in the destruction of existing provisions conducive to the peace and good order of the community.

* * We would even go farther and say that most, if not all, the privileges and immunities contained in the bill of rights of the Constitution were intended to apply from the moment of annexation; but we place our decision of this case upon the ground that the two rights alleged to be

violated in this case are not fundamental in their nature, but concern merely a method of procedure, which sixty years of practice had shown to be suited to the condition of the Islands, and well calculated to conserve the rights of their citizens, to their lives, their property and their well being."

But this decision says simply that this form of procedure was suited merely to the case of citizens of Hawaii, and does not announce it as applicable to citizens of the United States. Mankichi was a Japanese, not a citizen of the United States. It is fair to presume that he was in the Islands for his own pleasure or profit, a very different case from that of a soldier ordered to distant lands against his will to uphold the supremacy of his government against a semi-civilized foe.

The treaty with Spain, December 10, 1898, Article 9, states:

"The civil rights and political status of the *native* inhabitants of the territories hereby ceded to the United States shall be determined by Congress."

The "territories" above referred to are the Philippine Islands and other insular possessions gained as a result of

the war with Spain.

The act of Congress of July 1, 1902, ratifying the establishment of the temporary civil government in the Philippine Islands, extends (in Section 5) most of the constitutional guarantees of life, liberty and property to those Islands, but not the right of trial by jury. But this is evidently merely carrying out the provision of the treaty above quoted, as Congress does not yet apparently consider the native inhabitants capable of properly exercising that right. But what relation has this to the rights of American soldiers?

In the Dorr case (195 U.S. 138) we find some very instructive enunciations by Justice Day, delivering the opinion of the court. On page 141, quoting from American Insurance Company vs. Canter, we find:

"If it be ceded by the treaty, the acquisition is confirmed and the ceded territory becomes a part of the nation to which it is annexed, either on the terms stipulated in the treaty of cession, or on such as its new master shall impose. On such transfer of territory it has never been held that the relations of the inhabitants with each other undergo any change. Their relations with their former sovereign are dissolved and new relations are created between them and the government which has acquired their territory."

The American Insurance Company case was one which arose in Florida after its cession to the United States.

On page 143 of the Dorr case is found:

"For this case, the practical question is, must Congress, in establishing a system of trial of crimes and offenses committed in the Philippine Islands, carry to their people by proper affirmative legislation a system of trial by jury?"

Page 145: "The President, in his instructions to the Philippine Commission, while impressing the necessity of carrying into the new government the guarantees of the Bill of Rights securing those safeguards to life and liberty which are deemed essential to our government, was careful to reserve the right of trial by jury, which was doubtless due to the fact that the civilized portions of the islands had a system of jurisprudence founded upon the civil law, and the uncivilized parts of the archipelago were wholly unfitted to exercise the right of trial by jury."

Page 148: "If the right of trial by jury were a fundamental right which goes wherever the jurisdiction of the United States extends, or if Congress in framing laws for outlying territory belonging to the United States, was obliged to establish that system by affirmative legislation, it would follow that no matter what the capacities or needs of the people, trial by jury, and in no other way, must forthwith be established, although the result may be to work injustice and provoke disturbance rather than to aid the orderly administration of justice. If the United States, impelled by its duty or advantage shall acquire territory peopled by savages, and of which it may dispose or not hold for ultimate admission to statehood, if this doctrine is sound, it must establish there the trial by jury. To state such a proposition demonstrates the impossibility of carrying it into prac-Again, if the United States shall acquire by treaty the cession of territory having an established system of jurisprudence, where jury trials are unknown, but a method of fair and orderly trial prevails under an acceptable and long

established code, the preference of the people must be disregarded, their established customs ignored, and they themselves coerced to accept, in advance of incorporation into the United States, a system of trial unknown to them and unsuited to their needs."

Largely for the reasons given in the above quotations. the Supreme Court decided that Dorr was not entitled to trial by jury. But where is any reason given for subjecting American citizens to trial by a one-man court? The Supreme Court seems to be considering continually the case of the inhabitants of the islands, people of a strange and uncivilized race, and its reasoning does not anywhere refer to American citizens. As far as the committee was able to find. Dorr was nowhere referred to in this case as an American citizen. He and one O'Brien were the owners and editors of that sheet published in the Philippines known as the Manita Freedom. It is impossible to decide whether, if the question of citizenship had come squarely before the Supreme Court, it would have made any difference in the result, but it would at least have caused that tribunal to consider the question in rendering its decision, which was not done. But in any event, is an American soldier one of the inhabitants, or people, of the islands to whose needs the trial by jury is unsuited? Would the granting of this right to him be forcing on him an unknown method of trial contrary to his wishes? Even if it were decided that American citizens (civilians) in the Islands were not entitled to this right on account of the difficulty or impossibility of assembling competent juries, and that, being aware of the system of jurisprudence in force in those parts, the civilian who did not wish to submit himself to its peculiarities might stay at home, or if he went for his own pleasure or profit must submit himself to the laws there in force; still this is essentially different from the case of the soldier. The latter is in the Islands, frequently against his wishes, by the orders of his government and to maintain its supremacy, and that government should protect him against a system of trial not guaranteed him by the Constitution, and in which the judges

are often Filipinos, and hostile to him. Nor does the difficulty of assembling juries apply in his case, for there is always at hand that military jury—the court martial.

In the case we are considering, some difficulty is presented by the fact that the charge against the soldier is assassination, or murder, and that court martial, except in time of war, insurrection, or rebellion, can not try persons charged with capital crimes. It is probable that the conditions existing in Batangas at the present time are nominally peaceful. But the facts as stated in the problem scarcely seem to warrant an indictment for murder, and even if they do, the duty of the American government to protect its soldiers still remains. The Constitution does not require the trial of accused persons at the place of the commission of the alleged offense, except in cases occurring within the limits of one of the States of the Union: and there are plenty of places in the Philippine Islands where enough American citizens could be found to compose a competent jury. Otherwise it is believed that nothing remains except to try the soldier by court martial for manslaughter.

For the reasons given above, this committee believes that the Court of First Instance in the Philippine Islands could not try the American soldier under the conditions stated in the problem.

THE MACHINE GUN PLATOON; IT SHOULD BE RETAINED AS A PART OF THE REGI-MENTAL ORGANIZATION.*

By Second Lieutenant HENRY J. REILLY, THIRTEENTH CAVALRY, COMMANDING MACHINE GUN PLATOON.

I N an article in the CAVALRY JOURNAL for July, 1908, Colonel Parker concludes from a test made with the machine gun platoon of the Eleventh Cavalry that these platoons are less effective than a platoon of the same number of sharpshooters armed merely with their rifles.

On a careful perusal of his reasons for this conclusion, it appears that all the causes of his objections can be eliminated, and it is the purpose of this article so to show.

In the first place his platoon was allowed to fire but 1750, rounds during two seasons, that is, 437½ rounds per gun per year. This is not enough to enable a platoon commander to find out how his guns work or what means are necessary to secure a continuous fire. He naturally wishes to instruct his platoon at different ranges. To do this it is possible to fire but a few rounds at any range. The gun will always work and stay on the target for a small number of rounds, so that one could go on firing indefinitely in this manner and never discover the things which must be guarded against in order to insure a continuous and effective fire.

^{*}This article is in answer to the one by Colonel James Parker, Eleventh Cavalry, that appeared in the July number of the Cavalry Journal. It is not intended in any way as a comparison between the machine gun platoons of the Eleventh and Thirteenth Cavalry. Its purpose is to try and show that under existing conditions defects could not be discovered, and not being known, means to remedy them consequently could not be taken. Also that once known they can be remedied.

It is only by repeated firing of strings of 250 that these points can be found out and that the gunners can get the training necessary to keep their guns on the targets.

In other words, unless a platoon commander has been fortunate enough to have in some way been able to expend five and six times the allowance prescribed until the issue of G. O. No. 102, W. D. June 18, 1908, it would have been impossible for him to find out, not only how his guns fired and what is necessary to make them work continuously, but also to train his gunners and find out how he himself should control their fire so as to produce the best results.

The idea that the machine gun works on the principle that "you push the button and it does the rest" is quite prevalent but entirely erroneous. For the efficient use of this gun as careful a training of the gunner is necessary as is the careful training of the individual rifleman.

The gun as issued at present cannot be controlled, while firing, by one man unless it is wished to fire it clamped, then, as Colonel Parker justly complains, its fire is not distributed, and after a limited number of rounds it works up or down off the target and it is necessary to stop firing and relay it, thus preventing continuous fire.

To prevent this, the piece being unclamped, the method was first tried of having the gunner, while keeping the trigger pressed and his eye to the sight, traverse, No. I elevating or depressing it at the command of the gunner. In this way a continuous sweeping fire was obtained. As the elevating device has but few threads to the inch, a small motion of the hand produces a large motion of the muzzle, making it difficult for No. I to move the piece the small amount necessary to bring the fire exactly on the target.

As a result, the fire would be crossing the target up and down, as the gunner called out "Up" or "Down," instead of moving up or down to the target and remaining on it.

As this was not satisfactory and as it was not possible with the gun as issued, for one man to fire it while another with his eye to the sight traversed and elevated it, the safety catch of each gun was removed and a cord passed through the rear end of the trigger bar, so that a man kneeling in rear of the gunner could, by keeping the cord pulled, keep the gun firing while the gunner with his eye to the sight traversed the gun with one hand and elevated or depressed it with the other, thus ensuring a continuous sweep-

ing fire.

Jams are of frequent occurrence and have to be carefully guarded against. It is believed the number of them can be materially reduced if not entirely abolished. The more the experience had with the gun the less the number of jams. Frequently the spring on the left side of the gun needs to be tightened or loosened. This can easily be done and without interrupting the firing. All parts of the mechanism should be kept not lightly, but well oiled, as the rapid motion of many of the parts generate a great deal of heat. The gunner should be sure that his feed box is well down in its seat and not out of it a small fraction of an inch, as is sometimes the case. The point of most importance is to load the belts with the greatest care, being sure that the cartridges are in evenly, that they are free from dust, and that there is no dirt in the boxes. If ammunition has been carried around in the boxes for several months without being expended the cartridges should be removed, cleaned if necessary and the belts reloaded. Slightly oiling the rims of the cartridge cases also helps. When these precautions are taken jams are few and far between. As each gun is supplied with a belt filling machine, all of this can be done in the field as well as in garrison.

The peep in the rear sight is so small that at a thousand yards it is often impossible while firing to see the target properly. The front sight is so large that it obliterates a large portion of any target and prevents the gunner from aiming with any great degree of accuracy.

Both these defects can be remedied with a consequent increase in fire efficiency. It is believed that with a telescopic

sight the fire efficiency could be doubled.

After reading Colonel Parker's article the machine gun platoon was put to a similar test, with the results given below. Below the table of tests is given the results of collective fire of two infantry and two cavalry organizations, in the same garrison, on the same range, and under practically the same weather conditions. The other four organizations had either not fired or did not have their results available.

	Time	to		PR	PRONE K		KNEELING		STANDING		TOTAL	
Date	Go in	1	Time to Fire	Hits	Figs. not Hit	Hits	Figs. not Hit	Hits	Figs. not Hit	Hits	Figs. not Hit	Hits per Minute
July 14.	63 S	ec.	36 sec.	38	2	22	4	20	4	80	10	133.33
Aug. 22	60 S	ec.	66 sec.	25	5	47	4	38	3	110	12	100.00
Aug. 22	52 1/2 S	ec.	84 sec.	29	3	62	1	55	0	146	4	104.2
Aug. 22.	48 1/2 S	ec.	75 Sec.	31	4	57	0	99	2	187	6	149.6

1000 YARDS.

Organization	Hits, Fire at Will	Hits, Volley	Total	Strength (Approximate)
Inf. Co	57	59	116	55
Inf. Co	41	53	94	55
Cav. Troop	78	106	184	65
Cav. Troop	68	106	174	60

The delay between tests was due to the Northern and Army Rifle and Pistol Competitions.

In all four tests the platoon, packed, was advanced on the 1000 yards firing point at a trot and the command "Action front" given, followed later by the commands for firing at the target, which was the collective fire target (Target "L"). The first column is the time in seconds from "Front" of "Action front" till the first shot was fired. The second column is the time from the first shot to the last, including all pauses to observe fire, remedy jams, etc. In each test 500 rounds were fired, both guns firing together. In no test was there any jam with the exception of the second test on August 22d, during which the left piece jammed after firing half its belt; the right piece on finishing its belt fired the balance, and by the time it finished, the left piece was again ready to fire.

In the test of July 14th the full belt of 250 rounds was fired by both pieces without pause. It was found, however, that this prevented a proper observation of the fire, as one piece

might be raising all the dust while the other was entirely off the target, as the way the range is made no dust is seen unless the bullets are striking in the immediate neighborhood of the target. For this reason, in the subsequent tests, each gunner was instructed to pause occasionally while the other was firing, so as to see if he was on the target.

From the data we see that machine guns are capable of a very great rate of effective fire. Thirty-eight figures out of forty-eight hit in thirty-six seconds as in the first test, or forty figures with 187 holes in them out of a group of forty-eight, all in one and one-quarter minutes as in the fourth, could hardly be called ineffective or slow.

As regards the number of hits per minute on a target the machine gun platoon is not inferior to a platoon of sharp-shooters, but far superior, as the number of hits for Colonel Parker's platoon of sharpshooters was but fifty-eight per minute, while in the above table the minimum is 100 and the maximum 149.6.

It is true that a machine gun requires more cover than a man, but even so, it is easily hidden, and even in the open is quite inconspicuous at six or seven hundred yards.

It is believed that the nervousness of a man in battle can have less effect on a gun mounted on a rigid tripod, and incapable of movement except by means of a screw thread, than it can on a rifle held in the hand, and consequently capable of the widest movement in any direction.

While it is true up to the present, that a platoon of cavalry can go in action more quickly than a machine gun platoon, there is probably not a platoon commander in the service who has not plans for altering the present cumbersome equipment, so that these guns may be put in action in much less time than that now necessary. If a mountain gun in seven pieces and carried on four mules can be put in action in thirteen seconds, or out in seventeen* certainly a method can be devised by which a machine gun in but two pieces, and on but one mule, can be put in action in the same time.

^{*} Record in battery, formerly Seventeenth Battery F. A.

No reason is seen why machine gun platoons should not keep up with cavalry at any gait. In one of the last night maneuvers the platoon of the Thirteenth Cavalry trotted six miles at the regulation gait without halting, and came to the walk but once, and then only for fifty yards at a bad railway crossing, without in any way damaging the mules. No difficulty has been experienced at any time in keeping up with the squadron.

The cost of the platoon is greater than that of a cavalry platoon, but with the greater fire efficiency, to say nothing of the increased confidence which men always have when supported by guns of any character, and the moral effect on the opposing force, which all who have been under machine gun fire testify to, it would seem that they are well worth it.

It is not understood how a single rifle bullet can wreck a machine gun, as with direct impact the bullet from our present rifle has a penetration of but .259 inches in low steel, while the cover plate of the gun is .1975 inches, the side plates .125 inches, and they can only be struck a glancing blow unless fired at directly from the flank. The water jacket might be penetrated, but that would not put the gun out of action.

It is not necessary for the animals to come up to the guns to repack, as the guns dismounted and the tripod can easily be carried by the cannoneers for considerable distances.

It would seem that far from the machine gun being limited to use in a prepared defensive position, it is capable of considerable use with cavalry.

For a few examples:

It is frequently necessary for the different units of a cavalry screen to determine whether or not they are confronted by a small force merely trying to delay them, or a force capable of serious effort. The fire from a couple of machine guns would settle the question in a short time without it being at all necessary for any unit to become seriously involved.

On outpost, particularly at night, machine guns can be advantageously used. For instance, they could be placed on roads, the traversing device clamped. Then by slowly

changing his elevation the gunner could cover the road in a way that would prevent any body of troops advancing over it.

Machine guns by their volume of fire enable a cavalry commander to reduce the number of dismounted men used as a containing force, and therefore increases the number available for his main effort mounted, when such action is desired.

By their fire at long range they could compel an attacking cavalry to deploy much earlier than it otherwise would, thereby making its advance harder to control, and making it disclose its plan of attack at a much earlier period than would otherwise be done.

As a result of their experience in the Russo-Japanese war, in which machine guns were used extensively, both nations have added greatly to the number of machine guns in their army, and it is understood that the method preferred is to carry them on pack animals.

It is admitted that objections can be urged against the use of machine guns with cavalry. If the causes of these objections cannot be removed, and the objections are shown after long and repeated tests to outweigh the advantages, then the machine guns for cavalry should be abolished. Until this is conclusively proved, and so far it has not been commenced to be proved, they should be retained as part of the equipment of a regiment of cavalry.

THE MACHINE GUN PLATOON: SHOULD IT BE RETAINED AS PART OF THE REGI-MENTAL ORGANIZATION?

By FIRST LIEUTENANT FREDERICK J. HERMAN, NINTH U. S. CAVALRY.

In the article in the Cavalry Journal for July, 1908, Colonel James Parker, Eleventh Cavalry, arrives at certain conclusions concerning the relative merits of a machine gun platoon and a platoon of cavalry of his regiment based upon two tests set forth in his article, which he applies to the machine gun service in general. Such a limited radius of observation does not, in my opinion, justify these conclusions.

Taking Colonel Parker's observations and conclusions in detail, I shall endeavor to correct the impression that must necessarily have been created by his article.

It appears that the platoon in question had received very little actual firing instruction with ball cartridges. The 750 and 1000 rounds fired in two seasons were not enough to teach the personnel of the platoon the correct method of loading the pieces to avoid jamming, or to learn the causes of jams and how to avoid them.

Referring to the test on January 7, 1908, ten minutes are said to have been required to fire 750 rounds; jamming of the belt is mentioned. This frequently happens with the ammunition made in 1903 and 1904, now being used by the machine gun platoons. When this ammunition was manufactured it was not contemplated to load it into linen belts for machine guns—belts that hold the cartridge and bullet very tight—in fact, it may be said that the caliber, at least, of the machine gun for our service was determined upon to meet the ammunition already on hand or contracted

The bullets in this ammunition are not very firmly set into the shells, and when mechanically withdrawn from the tight clasp of the belt, they are often left in the belt or in the mechanism: the shell, with its hard grains of powder rattling around loose, enters the chamber and is discharged without burning all of the powder grains; the recoil, by reason of the absence of the bullet from the shell, is insufficient and the mechanism ceases to work. When started anew by hand the succeeding bullet enters the chamber and is wedged tight there by loose powder grains and cannot be firmly seated, the jam is complete, and the gun temporarily out of action. This is not a constructive fault of the gun or an evidence of inefficiency on the part of the gun detachment, but due entirely to ammunition defective and unsuitable for this weapon. With good ammunition (such as that bearing date of 1006) I have fired from 500 to 600 shots per minute with the Maxim automatic with good results, the rate of firing depending, to a limited extent, upon the tension of the recoil spring and the proper adjustment of crosshead washers. I have seen other platoons (white and black troops of infantry and cavalry platoons) do the same thing in the competition at Fort William McKinley, Rizal, in December, 1907, with guns that had fired very much more ammunition than those of Colonel Parker's platoon,

As a matter of course these matters were fully demonstrated before a board of competent officers when this gun was decided upon for our army, and two members of this board have assured me that the gun could actually fire 600 shots per minute effectively, and I have done it myself with the men and guns of the Ninth Cavalry. The tests before the War Department board were made by experts, and experts are required in the machine gun service of the United States as in the case in machine gun organizations of Europe and Asia, in place of the fag ends of troops and companies so often found assigned to our machine gun platoons. In civil life costly and intricate machinery is not placed into the hands of every coal heaver or laborer; a specialist, an engineer or other competent mechanic is employed for the purpose whose expert knowledge is paid for.

It is noted that to Colonel Parker it seems probable that the fire action of a platoon of cavalry is likely to be more effective than that of a machine gun platoon. The Colonel does not state what observations he has made, if any, concerning the other platoons of the service.

Some stress is laid upon the matter of continuous fire, which Colonel Parker states is impossible. I have seen my own platoon and the platoons of six other regiments fire continuously for 750 rounds with two changes of belts, at the rate of 600 shots per minute, and in the instances where this rate was not equaled it was invariably caused by lack of adjustment, showing inexperience and lack of expert qualification in their special arm.

Colonel Parker's cavalry platoon, composed of sharp-shooters, had definite and simple duties, and the amount of small arms practice with a simple weapon that an aggregation of 22 sharpshooters implies. Nothing appears in the Colonel's article as to what kind of men the machine gun platoon consisted or what opportunities for the special training of the men for this service was afforded them, notwith-standing the Colonel's opening remarks. Unless there was an exceptional departure from the general custom in such matters it is perfectly safe to assume that this machine gun platoon was not composed of the best men of their regiment.

Now to Colonel Parker's conclusions:

- I. The theoretical rate of effective fire for the Maxim gun has been proven to be correct in practical tests by experts and specialists as well as by those who were neither experts or specialists, as will appear hereafter.
- 2. The machine gun is not a weapon designed for bull'seye work or the other refinements of target practice. Its fire is not too much concentrated when the oscillating and elevating gear is correctly operated. (Presently there will be devised an arrangement to permit diagonal movement to enable the gun to follow the oblique movements of troops on hill-side slopes) Machine gun fire should be distributed over the whole target and the immediate zone of

the target; the moral effect of sound and distribution of bullets in the vicinity of any living target has a distinct value.

- 3. The lateral movements of the piece caused by vibration is an advantage in action rather than a defect, if the target is an appropriate one for machine gun fire. As to recoil, there is little or none, as it is taken up by the counterrecoil device at the muzzle, the nozzle.
- 4. The machine gun, while a weapon of opportunity, can also do good work on targets ordinarily left to individual riflemen, when manned by experts or specialists, i. e., adequately trained men. It has been the tendency in the United States service to require its machine guns to fire at inadequate targets and expect results for which the gun sights are not constructed. A man cannot shoot closer with a field piece than with a rifle at rifle ranges, but the Maxim machine gun in competent hands can do good and effective work at 2000 to 2500 yards, and this the rifleman can not do individually or collectively except as was done with much labor and sundry devices by the Turkish engineers during the siege of Plevna, who had no machine guns. The machine gun is most appropriately used for offensive or defensive action in the zone lying between the inner zone of effective artillery range and the long range fire of small arms.
- 5. The experiences of the officers and men of the machine gun service have been that the number of hits made by a machine gun on a line of skirmishers at 500 to 600 yards would be many times greater, as would its moral effect upon living targets, than the fire of a number of riflemen equal to the personnel of the gun detachment.
- 6. Correct use of the machine gun in action demands a position of concealment and cover, not only for the gun and its detachment, but for its led animals as well. While no indirect fire is practicable, the principles of gun concealment and cover during direct fire, and shelter and protection for led animals as practiced by the field artillery, are applied in most machine gun platoons. The gun, if set up for action in the open (which should never be done if any cover is available)

with its cannoneer serving the belts, offers but a fraction more target surface than a kneeling skirmisher; when cover is available the gun offers as difficult a target to find as does the individual rifleman. While the gun may get out of order at a critical moment, provision is made for their use in pairs, so that the machine gun fire need not cease on that account. A well trained personnel should be able to rectify such things, and be competent to quickly make minor repairs and exchange of parts under fire.

7. As to battlefield results, it is to be remembered that under ordinary circumstances the infantry or cavalry platoon is subject to excitement; its men have nerves, hearts, lungs; the stress of moving from place to place and the excitement of battle reacts and affects their fire efficiency, though all may be expert riflemen; the machine gun on the contrary is not so affected, and when once set up is equally steady in or out of excitement.

8. With special men and more perfect guns better results would certainly be obtained, and it would be a great stride toward the efficiency of our machine gun platoons if this fact were recognized in our regiments. It is not admitted that the test made by Colonel Parker is more likely to represent average results for machine gun fire.

9. The machine gun is exceedingly liable to get out of order, to jam, and become disabled, and it happens frequently and will continue to until the service is reorganized with an adequate personnel, separated from the regiments, and trained to meet the requirements of this special arm without interference.

To. The machine gun with its present arrangement of tie straps and other time consuming devices requires an average of about one minute to get into action after the command therefor, and an average of one and one-half minutes to repack and start off; this is no fault of gun or detachment, and will in due time be remedied and the time materially shortened by the use of a number of time saving devices that will undoubtedly be presented as soon as it is apparent that the machine gun service is seriously considered by the War Department. I have seen many troops who have re-

quired as much time and more to dismount to fight on foot and to get ready to deliver a controlled fire, and to remount and be ready to move off in orderly formation, and they were not all troops of the Ninth Cavalry by any means.

Since Bredow's famous charge I know of no cavalry movement at high gaits for 3000 or 5000 yards involving a squadron or more. Incidentally a machine gun command is not a charging force, but on the contrary, in the event of a charge its place would be at some stationary point where its fire would be preparing the way for such charge, and keeping down the fire of the objective enemy or his supporting troops. As to long marches of the cavalry, I believe it is generally known that the machine guns come in with the cavalry, and would probably come in before them if permitted. Cavalry columns, except in rare instances or under special circumstances, never do get in as early as the pack mules if the latter may choose route or gait. For such distances as the machine guns might be required to move rapidly during the progress of an action, as good time can be made as by the cavalry at maneuvering gaits. It is not expected that such guns participate in a charge where they have no place. At Camp McGrath, P. I., the machine gun platoon of the Ninth Cavalry has been able to start at a signal, pass over 750 yards of varied ground, and go into action against an enemy represented by an actual troop or squadron, at an actual range, and with the deflection scale set to meet wind conditions, and fire one blank cartridge (which is more difficult to fire than a ball cartridge) all within three minutes and fifteen seconds. The troop or squadron to beat that must hustle. In this regular drill the sections receive no credit unless all the conditions required for accurate and controlled fire are fully met, including concealment of pieces and cannoneers and the disposition and cover for the led animals. The mules of this platoon are not very well trained yet, having been with the platoon but a few months.

Machine guns are not intended for the maneuvers of the regiments or squadrons in ordinary regimental or squadron drills, although they do regularly participate in ceremonies with such commands; their proper function under existing organization is simply that of an adjunct to the cavalry or infantry, for use by the commanding officers of the cavalry and infantry as an appropriate opportunity presents itself, or is created. With a very few exceptions the opportunities afforded our machine gun platoons for cooperative action and instruction with their respective organizations of infantry and cavalry have been few indeed.

12. Just as soon as it is clearly proven that the fire effect of a platoon of riflemen is even approximately equal to that of a platoon of machine guns, or even a single gun, the comparative expense of both should be considered and the machine guns eliminated from the army.

* * *

Machine guns should not be set up in the open as plain targets for an opposing skirmish line, as seems to be the practice in Colonel Parker's platoon; a single bullet may disable a machine gun if it is struck in the right place; but it does not follow that every bullet that may strike a machine gun will wreck or disable it, as it may be struck in many places without being disabled or materially damaged; it should be withdrawn from action by hand under cover from the crest occupied, or otherwise withdrawn from view while being repacked; the horses and mules need not to be required to be brought up to the guns, leaving cover for bullet-swept ground.

While it is quite true that battles are still won with men, I imagine that a battle-axe company would be out of luck in a modern fight.

The machine guns at Omdurman on September 2, 1898, gained the respect of the British army; the machine guns of the Russians, eight of them, delayed the Japanese advance for a whole day and covered the retreat of their own army before they were lost in honorable battle at Tjurentschong early in 1904; at Mukden, on March 7, 1905, the Russian machine guns repulsed the attack of the Japanese brigade of General Nambu; at Port Arthur the machine

guns of the Russians became nightmares to the besieging Japanese; these are only a few instances of the use of these guns in a defensive role in field and fortification engagements, although these guns were used offensively in several of the fights here mentioned. The tremendous increase of these guns and the almost general reorganization of such troops into separate organizations of troops, batteries and companies and the specialization of this arm in the armies of the world (except the United States) does not indicate that they are as worthless and ineffective as Colonel Parker's article would have it appear.

The following are a few recorded evidences of machine gun efficiency:

Captain Henry Victorin, Austrian Cavalry, in the Austrian Cavalry Monthly for April, 1908, says:

The following problem in long-range firing was solved by my own detachment at Bruck on the Leitha at the target range near Nyulas on Lake Neusiedler on May 24, 1907. Situation: Our own detachment, without artillery, is engaged on the heights to the north of Nyulas against the enemy's forces, including four guns, advancing from the south. The four machine guns with our detachment receive orders to silence the heavy fire of the enemy. The machine guns went into action on a slope between vineyards with intervals of thirty to forty paces; for each gun and target 250 cartridges were allowed. The fourth target consisted of a battery of four guns at unknown ranges, later found to be 1500 m. Firing volleys at 1600 and 1800 m. by platoon, then by battery, no results were obtained. At 2000 m, by battery, the projectiles were seen throwing up the water in the lake about 500 m. to the right rear of the targets. The sights were adjusted to the left and the elevation reduced 500 m. and another volley fired, which was seen to strike at the second gun from the left; continuous fire was held upon the target for half a minute with apparently great results at the target. The trial shooting lasted two minutes. Results: Of the twenty-four figures at the four guns, thirteen were struck by nineteen hits; at the second

gun from the left all five cannoneers were struck. The targets exhibited the following results:

	1st Section	2d Section	3d Section	4th Section
(On piece or carriage	4	3	5	3
Hits On piece or carriage	7	7	2	3
No. of figures hit	4	5	2	2
Fired by machine gun	No. 4	No. 3	No. 2	No. I

"Had the firing been continued the machine gun detachment would soon have annihilated the hostile battery, and would so have fully solved the problem.

"The third target consisted of four infantry columns at unknown ranges, later found to be 1350 m. In two minutes 147 of the 192 figures were struck with 468 hits. The gunner of the fourth section of the machine gun battery, Corporal Brandner, Fifth Dragoons, made 242 hits with his 250 cartridges. The targets exhibited the following results:

Hits or figures	st Column	2d Column	3d Column	4th Column
	48 Fig.	48 Fig.	48 Fig.	48 Fig.
Hits Hits or figures	242	43	88	95
	47	21	39	40
Fired by machine gun	No. 4	No. 3	No. 2	No. 1

"The second target consisted of four groups of ten figures each at unknown ranges, found to be 1200 m. The firing was by platoon. The targets exhibited the following results:

(On targets	1st Group	2d Group	3d Group	4th Group
Hits On targets	13	14	12 8	3 3
By machine gun	No. 4	No. 3	No. 2	No. 1

"The first target consisted of four groups, each of twenty-seven rectangular sheets about eighteen by seventy-two inches at unknown ranges, found to be 1050 m. The firing was by piece. Results:

	rst Group	2d Group	3d Group	4th Group
Hits On sheets No. of sheets hit	57 22	6	9 8	14
By machine gun	No. 4	No. 3	No. 2	No. 1

"The following table shows the percentages of these exercises:

	FIRST EXER.		SECOND	EXER.	THIRD	EXER.	FOURTH EXER.		
Machine Gun	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.		Cent. lits.	Per Cent.
	of Hits.	of Sheets Hit	of Hits	Figs.	of Hits.	Figs. Hit	On Pes.	On Figs.	Figs.
No. 1	5.6	48.1	1.2	30	38	83.3	1.2	1.2	40
No. 3	3.6	29.6	4.8 5.6	90 90	35.2 17.2	81.2 43.7	1.2	2.3	100
No. 4	34.4	81.4	16.8	200	96.8	97.9 306.1	6,0	7.6	260
Per cent, for Det	8,6	45.3	4.2	72 5	46.8	76.5	3	.4	65

FIRING UPON MOVING TARGETS.

"This is accomplished by using several elevations, as illustrated in the machine gun battery of Lord Kitchener's forces against the army of the Mahdi at Omdurman; this battery awaited the attack of the Mahdi's riders, which to the number of some 20,000 horsemen, in irregular masses, charged the English formation. After firing short purposely by which the striking of the projectiles was plainly visible in the desert sand, the machine gun commander allowed the enemy to ride into the sheaf of his projectiles and then opened up on him with all six guns with continuous fire, using several elevations to accomplish greater depth of fire into the mass, whereby the constantly oncoming riders were well nigh annihilated. I tried this also during field firing on the Rose Fields near Bruck, and had a line of skirmishers run forward from the height over a road to cover, over and below the road. As the targets began to run forward, I found the elevation to the road within twenty seconds, the distance being quickly determined by the dust raised on the road. With range and deflection determined all the guns were directed upon the road; all remained at close attention until the targets approached the road. At my command continuous fire was delivered, which instantly showed a powerful effect. Ninety per cent. of figures hit remained lying; only a few targets continued their course in a wobbly, half inclined condition to cover under the road."

On October 13, 1906, five days after receiving their guns, the machine gun platoon of the Ninth Cavalry, composed of negroes, made an average per cent. of 79.05 firing at bull'seye targets over the known distance target range at Fort Riley, Kansas. at 200, 300, 500 and 600 yards. On October 20, 1906, eleven days after the receipt of their guns, this platoon, firing in a mixture of rain and snow, at single fire and volley fire, at 600, 800 and 1000 yards, 780 shots at the collective fire targets (the same number of shots fired by the two troops of its regiment at Fort Riley having the highest collective figure of merit), made 543 hits, distributed as follows:

Range, yards	боо	800	1000
No. of shots in single fire	130	130	130
Volley fire	130	130	130
(Prone figures	21	18	49
Hits on Prone figures Kneeling figures	141	56	65
Standing figures	110	33	50
Totals	272	107	164
Range per cent.	104.6	38.7	63

Average per cent. for three ranges 68.76.

The average collective figure of merit for the two troops, with 130 men firing, was 57.52 per cent.

On December 8, 1906, this platoon fired at a troop of cavalry represented by sixty "M" targets, deployed at normal distances and intervals as an advance guard, at unknown ranges, afterwards found to be from 600 to 1750 yards for the several groups. The platoon had then been in existence but a little over two months with most limited opportunities for instruction, and the platoon showed its lack of training, the

guns jamming frequently and the firing occupying about ten minutes. The result is shown in the following table:

Number of figures in targets	60	Number of figures hit	25
Number of rounds fired	983	Number of men hit	15
Number of hits	74	Number of horses hit	17

Groups	Figures	No. of Figs. Hit	Hits	Men Hit	Horses Hit
Point	4	3	22	2	2
R. of pt	4	I	I	0	I.
Left of pt	4	3	7	3	3
C. of V	2	2	8	2	2
C. file	ī	1	5	I	I
Support	16	11	27	5	6
C. file	I	0	0	0	0
Reserve	24	3	3	2	I
R. F. grd	4	I	1	0	I
Totals	60	25	74	15	17

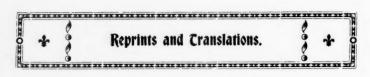
At Camp McGrath, P. I., on August 30, 1907, this platoon, after having fired some 6000 rounds through its four gun barrels in target practice, made 72.32 per cent. in firing at the collective fire targets at 600. 800 and 1000 yards firing, the same number of shots at single fire and volley fire at each range as was fired by 85 per cent. of a troop of sixty-five men; the time required was much less than that usually employed by a troop for this firing test.

On June 22, 1908, this platoon, at Camp McGrath, moved a section at a gallop for 200 yards and went into action in one minute and twelve seconds after the section halted, firing 100 rounds at six standing and six kneeling silhouettes, hitting ten of the twelve figures with twenty-five hits. The second section did the same thing in one minute and fourteen seconds, hitting eleven figures out of twelve with forty-one hits. The platoon was then sent over the same ground and went into action in an average time of 58½ seconds (first section 53 seconds, second section 65 seconds). The two guns fired 700 rounds in three minutes, hitting all of the figures with 301 hits.

During the past two years my platoon has had considerable target practice, and in all of its firing, unusual inaccur-

acy and jamming was generally occasioned by either the poor grade of ammunition furnished or the insufficient training and inexperience of the men, and in some instances lack of intelligence, and not from structural defects of the gun or faulty equipment. In every case where bull's-eye target practice over known distances was had, the scores, notwithstanding the sights furnished, were those of the first-classman, or sharpshooter, and that occasionally by men who failed to so qualify in their troops at small arms practice.

In conclusion, it may be said that, based upon the experiences of our own machine gun commanders and the few officers who have employed the guns in conjunction with infantry and cavalry in our service, the machine gun is an exceedingly useful and indispensable weapon; that it should be separated from the cavalry and infantry, where it is not wanted; that the organizations be mounted and reorganized as a separate arm, where its tactical uses may be developed and its personnel become, not merely proficient, but expert, as the requirements of this service demand.



DISPLACEMENT OF THE CENTER OF GRAVITY OF THE HORSE, EQUILIBRIUM AND THE AIDS OF THE RIDER.*

By W. K. L. VAN HELDEN, LIEUTENANT GENERAL, AND AIDE DE CAMP TO HIS MAJESTY, THE KING OF HOLLAND, SENIOR INSPECTOR OF CAVALRY OF HOLLAND.

INTRODUCTION.

In reality, all training of the horse is nothing more than a kind of gymnastics, which one practices in order to make the horse able to submit himself to the will of the rider, which the latter makes known without being conventional, by means of the aids. That is to say, that the relation established by the aids between the man and the horse must be such that the horse is obliged to obey. All training must, therefore, be based upon the principles of equilibrium and anatomy, so that the rider does not depend upon the good will of the animal to obey or refuse.

These aids man discovered by intuition and applied by instinct. It was only lately that more or less reason was given for their use, and that they were formulated in a prescribed manner. We must admit that horse training came first, as physics was then purely experimental.

^{*}Translated from the French by Second Lieutenant E. Engel, Ninth Cavalry.

The methods of training that have been developed, are based upon the experience acquired by good riders, substantiated as to their physics, after experiment and observation, by the law of inductive reasoning.

When we look over the different methods of training we easily perceive that the general tendency—intentional or intuitive—is nothing more than to obtain from the horse the displacement of his center of gravity at any desired moment, according to the will of the rider. It is without doubt most logical to teach this displacement to the horse, at first when he carries no weight, provided the aids employed correspond as nearly as possible to those that will be used when mounted by the rider.

If the horse has learned, without bearing a rider, to displace his center of gravity from front to rear, rear to front, right to left and left to right, according to our will, he will be so much better able to displace later the common center of gravity of horse and rider in a like manner. For this reason we believe this preparatory work facilitates the end more quickly and surely.

It is clear that in order to displace his center of gravity, the horse modifies the form of his skeleton, composed of various levers. This he does by aid of the muscles, which are put in action by the nerves, which on their side obey the impressions received from the brain. How this telegraphy is effected is of secondary importance to us. It is to the physiologist that we abandon this study.

The rider, who devotes himself to training, has only to seek the means by use of the aids, that enables him to put the muscles in action, to develop and to control them; then to obtain by them the placing in action of the levers of the skeleton, changing their attitude so that at each moment the center of gravity is displaced according to his will.

It is by pressure of the attachments, more or less vigorously, that we act upon the nerves, from them directing most frequently the superficial muscles, which communicate either directly or indirectly their impressions to those lying underneath. The impressions thus produced become fixed in the memory of the horse, as the aids become more and more delicate.

It is by repeated exercise that we obtain little by little the instant submission of the levers of the skeleton and also the immediate displacement of the center of gravity.

CHAPTER I.

A saddle horse cannot be considered truly well trained if he is not able to displace at any moment his center of gravity—or better yet, the common center of gravity of the horse and rider—according to the will of the rider, which he makes known as has already been explained, by means of the aids.

A horse in order to advance his foot firmly and in order to increase the speed of his gait, must bring his weight forward. In order to stop or diminish his speed he must carry his weight back toward the hind-quarters. In order to go to the right or left he brings his weight towards the side towards which he goes.

It is especially by the displacement of the head, neck, and shoulders that the horse transfers his center of gravity; and this in direct relation with the power or motive force of the hind quarters, which we can distinguish as power of propulsion and power of support.

The hind quarters act as a spring. In closing the angles formed by the joints, the power of tension and support accumulates, while in opening these angles the power of extension and propulsion manifests itself. The more the tension is strengthened, the more energetic will the extension become.

It is especially by contraction of the flexors that tension pronounces itself, while by contraction of the extensors the extension does, and propulsion takes place.

In extending the head and neck, the horse brings his center of gravity forward; in bringing them back—direct flexion—he sends it to the rear. Direct flexion is of great

importance to be able to employ at will, and is called by Goubaux and Barrier, in their excellent work, "The Exterior of the Horse," "the powerful balancer."

As we have previously said, it is by the aids that the rider obtains from the horse the displacement of his center of gravity. Among these aids the transfer of the weight of the rider is of first consideration. It is done instinctively. The good rider does it in such a manner that persons not familiar with the methods of the art scarcely perceive it. However, nothing harms so much the appearance of the rider as this transfer of weight made in a too visible manner, whether it be voluntary or involuntary. In order to get more speed the rider brings, almost invisibly, the weight forward; in order to slacken or stop he carries it back; in order to go to right or left he leans to the side toward which he wishes to go. It is by these means, among others, that we make known our intentions to the horse, which, wishing to obey, transfers the common center of gravity.

If the horse does not wish to obey, he displaces his center of gravity to the opposite side towards which the rider desires he shall go. If the latter does not succeed by the combination of the aids which he uses to submit his horse to his will, he is obliged to follow with his own center of gravity the displacement of that of the horse, otherwise he breaks the equilibrium.

For the same reason that in our day we prepare the young soldier by gymnastics for the profession of arms; it is also well not to commence the actual training of the horse when mounted until we render him apt to understand us by preparatory gymnastics, which are called flexions, and which should be continued during the entire period of training.

It is evidently of great importance to know where to find the center of gravity of the horse. It is very difficult, almost impossible, to determine the precise situation of it, because the body of the horse is not homogeneous, and respiration likewise has a certain influence upon its situation. It would be very difficult to place the horse in two positions, sufficiently different, that the center of gravity could be determined by the intersection of two vertical lines. Fortunately for equestrian art, it suffices that one can determine with sufficient precision the vertical line passing through the center of gravity of the horse when standing on a horizontal plane. People have reasoned much upon the situation of the center of gravity; they speak of it continually in books on training, and some do not hesitate to draw the line of gravitation of horse and rider without demonstrating upon what facts it is founded.

One of the most conscientious observers of the horse and his carriage and gaits (Von Oeynhausen) makes his line fall a little to the rear of the withers, when the horse is standing in a natural attitude, with the head, neck and shoulders inclined at an angle of forty-five degrees to the horizon; and the vertical line passing through the center of gravity of the rider, when sitting erect, he makes pass through the middle of the upper part of the body of the horse. A priori, we can say that this must be an error; the last vertical must fall nearer the front legs, because the forehand is heavier than the hind quarters.

Another author, Borelli, pretends that this line falls at the center of the quadrilateral formed by the four legs. This is absolutely impossible, as it is proven that the forehand is heavier than the hind-quarters, and in consequence the vertical line must fall nearer the front legs. Von Heydebrand, in his excellent work on the "haute école de Vienne," pretends that this line passes through the only spinous process of the vertebra which is vertical, which, according to him, is the fourteenth. If this were true, the line would fall as Borelli pretends.

General Morris and the riding master Boucher have determined the weight of the forehand and the hind parts by actually weighing horses on scales with movable platforms. They have ascertained by experiment the weight that the two bipeds have to bear separately.

The weighing machines, says General Morris, were placed in such a manner that the front legs of the horse stood upon the middle of the first set of scales and the hind legs upon the middle of the second. The two platforms

were exactly on the same level and belonged to balances of the same proportion.

A saddle mare of ordinary conformation, good head and neck, a little long in relation to the rest of the body, remaining saddled and bridled, was placed upon the scales with the following result:

Keeping her head in the ordinary position rather low than high.

I. Forehand, 210 kilograms; hind parts, 174 kilograms; total, 384 kilograms; difference on forehand, 36 kilograms.

There was a fluctuation of three to five kilograms which was fixed alternately upon the forehand and the hind parts, caused by the movement of the bowels and respiration.

Her head was lowered so that the top of her nose was at the height of her chest, with the result that the forehand was overcharged with eight kilograms, of which the hindquarters were relieved.

II. Forehand, 218 kilograms; hind parts, 166 kilograms; difference on forehand, 52 kilograms.

Her head was then raised until the tip of the nose was at the height of the withers, the forehand then threw back ten kilograms upon the hind parts.

III. Forehand, 200 kilograms; hind parts, 184 kilograms; difference on forehand, 16 kilograms.

Her head was placed as in the first case, and by the action of the bit flexed on the neck, she then threw back upon the hind-quarters a part of her weight equal to eight kilograms.

IV. Forehand, 202 kgs.; hind parts, 182 kgs.; difference on forehand, 20 kgs.

These results obviously prove that the more the head is elevated—if it is natural and not by support of the hand—the more the weight of the head, neck and shoulders is equally distributed upon the limbs.

After these experiments M. Boucher mounted the mare with the following results:

V. Forehand, 251 kgs.; hind parts, 167 kgs.; total, 148 kgs.; difference on forehand, 54 kgs.

The rider, sitting in the academic position, had distributed his weight of 64 kilograms in the following manner: Forty one kilograms upon the forehand and twenty three upon the hind-quarters.

Being seated upright and bringing the upper part of his body slightly to the rear, M. Boucher made ten kilograms pass back to the hind quarters; by bringing back his horse's head in direct flexion he further overcharged the hind-quarters by a weight of eight kilograms; total of eighteen kilograms. With these positions we have:

VI. Forehand, 233 kgs.; hind parts, 215 kgs.; difference on forehand, 18 kgs.

More recently General Morris and the Veterinary in Chief, M. Bellanger, obtained with twenty-two horses the following results:

	Н	Head at 45°			Head Up and Slightly flexed on Neck			Head Depressed and Flexed on Neck				
	Foerehand	Hindparts	Total	Difference	Forehand	Hindparts	Total	Difference	Forehand	Hindparts	Total	Difference
VII. Average of 11 horses, good conformation, head an neck light	nd	195	455	65	250	205	455	45	267	188	455	79
VIII. Average of it horse good conformation, ne short and head large	ck	200	446	46	240	206	446	34	250	196	446	54

All these experiments demonstrate to us the great influence the position of the head and neck has upon the weight borne respectively by the fore and hind legs.

It is remarkable that in case V, the rider distributed his weight of 64 kilograms in such a manner that 41 kilograms was supported by the fore legs, and only 23 by the hind legs, while by the means employed by the rider in case VI he lightened the fore legs of 18 kilograms.

From I and III, we see that in raising the head the forehand is lightened by 10 kilograms. The results obtained in cases V and VII demonstrate still more clearly the important influence that the displacement of the head and neck has upon the distribution of the weight upon the fore and hind legs.

In case V the forehand bears 54, and case VI 18 kilograms more than the hind-quarters, a difference of 36 kilograms.

From the series of experiments of General Morris and M. Bellanger, it results that the horses having the head and neck light (neck generally light and long), the forehand is lightened by ten kilograms, when the head is up and slightly flexed on neck; and only of six kilograms in those horses having the neck short and the head large.

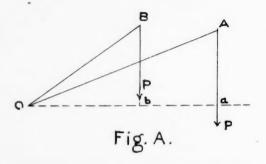
This does not correspond entirely with the conclusions of General Morris, when he said "that the weight of the fore-hand exceeds that of the hind-parts by about one-ninth of the total weight of the horse, and that the change in the position of the head puts a weight of ten kilograms of the forehand upon the hind parts, etc." These conclusions only apply to those horses that have a thick neck and heavy head, and not to those that have a light head and neck.

From the weight given in cases VII and VIII, one concludes that horses with light heads and long necks can relieve the forehand by an equal distribution among all the limbs of about one-seventh of the total weight, while those horses with thick, short necks and heavy heads, of only about one-ninth. One sees, therefore, how this balance maker is more powerful in the first case than in the second.

When one considers that the weight of the head of a saddle horse is from fifteen to sixteen kilograms, and that this weight acts at the end of the arm of a lever formed by the cervical vertebra, which in being stretched out or carried back lengthens or shortens the arm, one easily sees the great influence that the displacement of the head exercises upon the situation of the center of gravity. This influence will be so much greater when the arm can stretch well out and draw itself well back.

Long necks are relatively better able to draw up and back and to stretch out than short necks. It goes without saying that horses that have this advantage of conformation are the horses most desirable for the saddle. In Fig. A, let P be the weight of the head, OA the direction and length of the neck, then the weight P acts upon the arm Oa. If, on the contrary, the direction and length of the neck are represented by OB, the arm of the lever will only be Ob.

However important the weights of General Morris may be, it is to be regretted that he did not establish at the same time the bases of support, or better yet, the distance of the vertical line passing through the center of the front hoof from the vertical line passing through the center of the hip joint on the same side.



We would then know where to find the line of gravitation of the horse, and also that of the horse with the weight he bears. Accordingly what we must endeavor to attain is as follows:

The weight that the horse carries should be distributed upon the front and hind legs in the same proportion as his weight is distributed when not mounted and at liberty, having the head and neck inclined at an angle of forty-five degrees, and the base of support forming a rectangle, with the legs neither stretched out nor brought too far under.

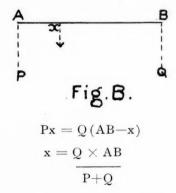
In admitting this, we must endeavor in consequence to place the weight which the horse must bear, and especially the lifeless weight, in such a manner that the vertical passing through the common center of gravity of the horse and the weight which he bears coincides with the vertical passing through the center of gravity of the horse alone.

Not having occasion to make similar weighings as those of General Morris, we have endeavored to utilize his results in seeking for the line of gravitation in some blooded horses, using photographs to determine the distance between the middle of the front hoofs and the vertical plane passing through the center of the hip joints.

We have found that this distance is generally one sixth less than the height at the withers. For example, with a horse of 1.55 m, at the withers, we have

1.55 m.
$$-\frac{1.55 \text{ m.}}{6}$$
 = 1.29 m. to 1.30 m.

In Fig B let AB be the distance from the middle of the front feet to the vertical plane passing through the hip joints; P the weight of the forehand; Q the weight of the hind-quarters. Then the distance of the line of gravitation of the horse from the middle of the front feet (x) will be



Taking the average of the eleven horses of good conformation of General Morris, having the head and neck light:

Total weight (mean) 455 kilograms.

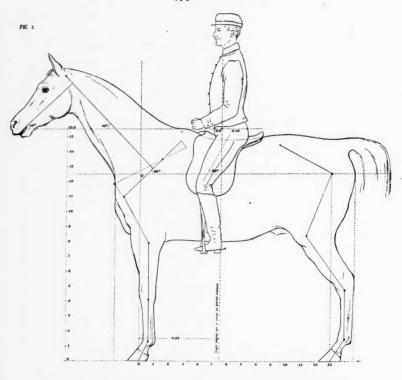
Weight of forehand, 260 kilograms.

Weight of hind parts, 195 kilograms.

With the head placed at forty-five degrees (the nose at the height of the withers).

Taking the average height at the withers as 1.55 m., and the distance AB as 1.30 m., we find for x

$$x = \frac{195 \times 1.30}{455} = 0.55 \text{ m}.$$



Admitting that the horse was mounted by a rider of sixty-four kilograms; distributing his weight so that forty-one kilograms falls upon the forehand and twenty-three upon the hind-parts (see Case V), then calling the distance between the common line of gravitation and the vertical plane passing through the middle of the front legs y, we have:

$$(260 + 41) y = (1.30 - y) (195 + 23)$$
then
y = 0.55 m.

With these conditions the line of gravitation of the horse alone, and that of horse and rider together superpose, which is exactly what is desired, as previously stated.

Gaubaux and Barrier, who have made similar weighings as those of General Morris, have found everything of importance to determine the situation of the line of gravitation in the horse.

They have taken a saddle horse of good conformation and equilibrium, that measured 1.55 m. at the withers and croup, and 1.53 m. from the point of the shoulders to the point of the buttocks.

They weighed this horse when saddled and bridled, with the neck at forty five degrees and the head held high. The base of support was equal to 1.20 m. Total weight of 445 kilograms was distributed as follows:

Upon the front legs					
Upon the hind legs.			 	 . 188	kilograms
	Tota	a1	 	 4.15	kilograms

In a horse fulfilling these conditions the line of gravitation must fall at 0.51 m. to the rear of the front legs.

As the horse is not as long as high, it is evident that the base of support was shorter than that which we have previously given. The horses that we recently considered were all higher than long as is general with horses of blood.

The forehand of the horse used in this case by Gaubaux and Barrier weighed sixty nine kilograms more than the hindparts. In consequence the forehand could send upon the hind parts about $\frac{\tau}{6.5}$ of the total weight.

Suppose that the horse was mounted by a rider weighing sixty four kilograms, taking a similar position to that of Baucher, his weight being distributed in such a manner that forty-one kilograms would be on forehand and twenty-three on the hind parts.

Then
$$(257 + 41)$$
 y = $(1.20 - y)$ $(188 + 33)$
y = 0.5 m.

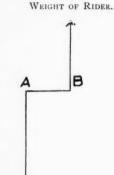
With this supposition the rider, therefore, finds himself seated a centimeter too close to the forelegs.

It appears to us to be also of a very great importance, especially for the army horse, to regulate the pack—the dead weight—in such a manner that its distribution will be made in proportion to the natural distribution on the legs.

It is, however, absolutely injurious to burden the flanks of the horse, as the floating ribs fulfill an important function

in respiration.

The above only relates to the distribution of the weight upon the fore and hind legs when the horse is standing in place. We shall now proceed to the requirements for the distribution of the weight when the horse is in motion or about to be put in motion.



WEIGHT OF HORSE.

FIG. C.

This permits us some reflections upon the position of the rider on the horse.

In conjunction with that which we have previously stated concerning the necessity of carrying the weight forward when in motion, and this in accordance with the speed of the gait; one should not appreciate too much this advantage by confirming a forward seat in the saddle, but should place some of the weight over the short ribs.

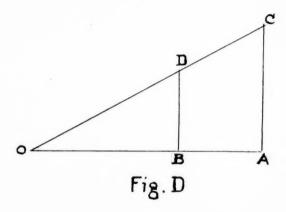
This position demands that the thighs descend well down, and in consequence the knees are low. It is then that the

rider—provided that he continues to be well placed upon the short ribs—will know the best way of sitting the horse with the entire length of his legs, keeping contact at all points with the saddle and the hair of the horse.

Not only is solidity thereby gained, but also harmony with the movements of the horse.

The horse in all his gaits brings the weight forward. The rider should endeavor to do likewise.

The more the lines of gravitation are brought together, the smaller will be the arm of the couple AB, at the moment when the horse by his movement elevates the rider. (See Fig. C.)



However, it is clear that if the horse extends the long muscle of the back (longissimus dorsi) and if the rider remaining seated at A, is elevated to the height of AC from the saddle, when he places himself at B, he will only be elevated to the height of BD. In the first case the horse acts as the lever OA, in the second as the lever OB. (See Fig. D.)

Hence the forward seat in the saddle is very important, not only to develop the gait of the horse, but also to give firmness to the seat and flexibility with the movements of the horse.

For a rider of average height and good build, we would fix the desired situation of the thighs at about sixty degrees. There are riders, however, who are not built so as to be comfortable in this position.

The forward seat in the saddle is the proper seat for the military rider in order that he may handle his horse properly, either in individual combat or in the charge, using the saber (thrusts) and the lance.

We leave to the amateur rider the leaning back seat, which brings nearly always the lower part of the legs forward and the knees high, and makes him too late in using his legs as an aid, if the horse is active and clever.

Very often the saddle which one uses prevents one from taking the desired position. The pommel may be too high and the seat inclined from front to rear, rather than from rear to front, in such a manner that the rider must make an effort to keep his thighs in the desired direction. Now any muscular effort is injurious to the elasticity of the seat.

What has been said in regard to the center of gravity guides us when referring to equilibrium.

In this respect we find in many works on equitation irrational ideas.

In order to cite an example: A German author, Plinzner, who has made quite a reputation by his works on equitation, writes on page 42 of his "System der Pferde-Gymnastik":

"One understands by balance in station or in movement, the attitude of the horse in which the weight borne by the legs is equally distributed upon them. As the front legs in nature support more weight than the hind legs, we cannot obtain equilibrium or balance until we place the horse in such a position that the center of gravity is near the hind legs. This artificial attitude which we exact of the horse is called the balance position. It must be the result of a certain contraction of the vertebral column by which the forehand is brought to the rear and the hindparts carried to the front. At the same time the latter lowers itself in relation to the former because the hindparts in flexing its articulations brings itself under the body."

In this we do not agree with Plinzner. If the horse stands in the artificial attitude designated by Plinzner—during which

the weight is equally distributed upon the four supports—he remains in stationary equilibrium, as truly said the only equilibrium conceivable, although in equitation we often speak conventionally of equestrian equilibrium or balance. What he must mean by this equilibrium we shall speak of later.

It goes without saying that stationary equilibrium can only exist in station, and never with movement, the horse not being able to move without breaking this equilibrium.

It is therefore an error to pretend that the horse can move in stationary equilibrium; that is to say, when the weight is equally distributed upon the four supports, and in consequence the line of gravitation falls at the intersection of the diagonals connecting the supports.

As in station, so in motion the horse can hold himself in equilibrium as long as he does not fall.

To break and reëstablish equilibrium alternately, is what produces movement. It cannot, therefore, constitute movement unless the equilibrium be broken.

We do not understand by moving in equilibrium that the movement is made in such a manner that after every rupture of equilibrium it is reëstablished anew and immediately after.

It is therefore incorrect to say that it is only in such and such a condition that the horse moves in equilibrium. No matter how the horse moves, he moves in equilibrium; that is to say, in breaking and retaking alternately equilibrium.

If the weight is equally distributed upon the four supports, the horse is in the correct position of rassembler in place. Sometimes there are different degrees to attain; for example, in order to execute the turn on the haunches, it is necessary to rassembler in such a way that a great part of the weight may be thrown upon the haunches, putting strongly in action their power of support.

The more vigorous the succession of rupture and reestablishment of equilibrium follow each other, the more unstable will the equilibrium be. It can, therefore, be said "that the instability of the equilibrium measures the speed."

Goubaux and Barrier say it is clear that if by displace-

ment or situation, more or less elevated, the center of gravity is carried without the base of support, the horse will be compelled to move his legs more rapidly in order to support the mass; otherwise he will fall.

The race horse stretches his body, extends his head and neck and appears almost to lie upon the ground so that he can bring as far forward as possible the center of gravity in the direction of the movement.

The school horse moves in a vigorous way in order to easily execute the various movements exacted at any instant by his rider. His gaits are shortened or lengthened, his equilibrium more secure and the displacements of his center of gravity less extended but more numerous.

The race horse, by virtue of his speed and instability of his equilibrium, can scarcely move except upon a straight line. The least lateral displacement of his center of gravity made in a sudden manner will certainly give him a fall.

In order to go to the rear, the horse must throw on the hind legs a part of his weight, which in station is borne by the forelegs. The more weight he puts on the hind legs the more quickly will he move to the rear.

. In order to be correct in movement, it is only necessary to speak of a good or bad distribution of the weight.

According to us, the distribution is good if in forward movement the forehand never carries more weight than is necessary for the speed of the gait exacted.

If the horse carries too much weight forward, it manifests itself by a pronounced support upon the bit; if, on the contrary, he carries too little weight forward, the rider perceives it by a failure of contact with the bit.

If one wishes to call equestrian equilibrium the proper distribution of weight upon the fore and hind legs, as we shall determine later, we could be guided accordingly; but we shall never accept the stationary equilibrium of Plinzner for movement.

The truth compels us to say, however, that Plinzner is not the only one who has advanced similar ideas,

As long as the horse does not fall, he moves in equilibrium. It may be that he bears too much or too little weight

on the fore legs; and we cannot consider a horse well trained or well ridden that is in this condition in any of his gaits. He should be able to move with a correct distribution of the weight, that is to say, proportioned to the speed the rider desires, and at any instant to increase or diminish the gait.

If we consider that the weight of the head and neck of a horse amounts to a ninth or tenth of the total weight, we can readily understand the great importance of knowing how to utilize their displacement.

To lengthen and shorten the head and neck is the powerful means which the rider disposes, or endeavors to dispose, in every case, in order to regulate the distribution of the weight in displacing the center of gravity; and this in direct relation with the force of propulsion and the power of support of the hind quarters.

In an active horse, intended for no other use than the saddle, the force of propulsion is generally well enough developed by nature, or is easily developed. It is not so, however, with the power of support and tension.

It is necessary that the rider have great tact and experience in order to develop a horse as he wishes.

Most saddle horses, hunters and race horses, leave much to be desired in this respect. These horses, in most gaits, bring the hind legs under the body by the articulation of the pelvis with the sacrum and loins, without the other joints assisting therein sufficiently.

To the failure of action in the hocks and knees we attribute, in many cases, forging, and, what is still more to be regretted, the premature break down of the legs; because the hind-quarters do not spring as they should, but give and take the shock, instead of preventing it. These horses have the hind-quarters and back stiff. They very often have an arched appearance, and one cannot succeed in making them take the placer until they have learned to flex properly the joints in the hind-quarters.

If the horse does not give way to the placer, one can never hope to obtain the rassembler, which is certainly, as expressed by Goubaux and Barrier, "the true position preparatory to all movement."

It is a torment for a horseman who has equestrian tact to ride a horse that cannot give way willingly to the rassembler, though the horse may be of the highest breeding. Such a horse can only be to the rider a means of transportation, instead of giving him, by his elasticity and lightness, one of the greatest pleasures he can experience.

We consider the piaffer as the best means of bringing the horse into equilibrium; also in order to teach him to properly place the hind legs under the center, so as to obtain the rassembler, if he is to do it in the highest degree.

Now the correct rassembler in its various degrees is the gem of feel, equilibrium and training. In exercising the horse at the piaffer, we not only develop the power of support and the suppleness of the hind-quarters, but at the same time the direct flexion of the neck. The suppling of the hind-quarters teaches the horse to flex all his joints in those parts. Bringing the head in on the neck fixes the head and neck, which is an indispensable condition for all saddle and army horses.

We can consider the neck as being to the horse as the helm is to a steamboat when backing. It is impossible to keep the horse in the direction desired if the neck is weighed down, just as it is impossible to keep the boat when the helm is slack.

The fixing of the neck in addition obtains for us a quiet carriage of the head, which is an indispensable condition in regulating the gaits. Hence all the lateral flexions of the neck, as practiced by Baucher should be avoided.

Summing up, we arrive at the following conclusions:

1st. If the horse is standing in place in a natural attitude, the rider must endeavor to sit in the saddle in such a manner that the vertical line passing through the common center of gravity of the horse and rider, coincides with that passing through the center of gravity of the horse.

2d. If the horse is in motion the rider must sit forward in the saddle in order to facilitate the gait, and this in relation to the amount of speed desired. If the forward posi-

tion in the saddle in combination with the other means is not sufficient for the speed desired, the rider must lean the upper part of his body forward. If the horse of his volition carries too much weight forward, the rider must correct same by bringing same to the rear, in order to obtain the distribution required. This overweight on the forehand of a part of the mass manifests itself by support upon the bit.

3d. If the horse holds himself back, in other words, is not inclined to push enough weight forward in proportion to the speed desired, he is what is called behind the legs and behind the bit. Then the force of propulsion of the hind-quarters, corresponding with the tension of the long muscles of the back (longissimus dorsi), must be accelerated, for the reason that when the horse bears too much weight upon the haunches, he commences it by relaxing the back, which gives it a convex form, while if he stretches out the back it will take the concave form, pushing the mass forward.

The tension of the long muscles of the back, therefore, corresponds with the force of propulsion and their relaxation with the force of support (see Chapter II).

The rider who possesses equestrian tact will know how to bring more or less of the weight forward in proportion to the relaxation on tension of the back. It is the alternate tension and relaxation of the back which constitutes the elasticity of the horse. This holds equally as well to the back of the rider, who in hollowing out the lines bends the back by contracting the long muscles on each side of the spine and rounds it in relaxing them.

We must exact of the horseman who is training horses that he will have at least enough equestrian tact to feel the tension and the relaxation of the back of the horse in the diagonal gaits, also the alternation of the fixed points of the muscles of the back in the bounding gaits and leaps.

What we have said of the tension and relaxation, and of the concave and convex form of the back does not agree with what is generally admitted. We leave the proof of what we advance to the following chapter. The errors of which we have made mention we can attribute in a good part to the would be explanations or theories which cannot stand a vigorous test. In general, those who teach equitation require a little too much that we believe them on their word. The authoritative position of the profession is not there for nothing.

CHAPTER II.

THE AIDS OF THE RIDER.

As we have demonstrated, the purpose of all training is to obtain from the horse by means of the aids, the displacement of the center of gravity at the will of the rider.

The aids which the rider uses in order to obtain this displacement are:

The shifting of the weight of the rider.

The legs with the spur.

The bit with the reins.

It goes without saying that a good rider uses these aids in perfect harmony.

In the first chapter we treated of the transfer of the weight. In order to fully explain the other aids it is necessary to recall that the bones which form the skeleton of the horse are levers, articulating by means of the muscles, which contract and relax according to the will of the animal.

The muscles of the locomotive apparatus, in contracting, tend to draw together the two extremities toward the middle, or one extremity on the other.

The extremity which, in the last case, is not displaced, is called the origin, or fixed point, while that which is displaced is called the termination, or movable point.

The animal can, by his will, make the fixed point the movable point, and vice versa; for example, the levator humeri muscle, or common muscle of the arm, neck and head (Fig. 2a), can be a motor of the head as well as of the arm. In order to be one or the other, the muscles which fix or make immovable the head or the arm, would be contracted to form the fixed point.

In general, when muscles contract they swell and harden;

when the contraction ceases they relax, and in consequence stretch out.

Almost all the muscles of the muscular system are in pairs, that is to say, the same muscles are found on each side of the body.

Muscles which in contracting produce a contrary action are called antagonistic muscles; those which cooperate with this action are called congeners.

Muscles in pairs are able to be congeners or antagonistic according to the will of the animal; for example, the flexors



and extensors of the neck are antagonistic in the direct flexion, while the flexors and extensors of the same side are congeners in the lateral flexion, and at the same time antagonistic to those of the opposite side of the neck.

Muscles are always congeners when they contract in order to constitute a fixed point; for example, the horse, in order to rear, especially uses the long muscles of the back (longissimus dorsi, Fig. 3aa), so as to raise the forehand. These

muscles make their fixed point in the hind quarters, and in order to constitute this fixed point they need the cooperation of the muscles of the abdomen and those of the croup; while to raise the hind-quarters they make their fixed point near the withers.

It is especially in jumping and in the bounding gaits that the rider distinctly feels the alternate change of the fixed points of the longissimus dorsi muscle.

In general, it will be well to consider at all times that all movements are produced by a complex action of muscles.

EFFECTS OF THE SPUR AS AN AID.

The spur is the aid which reënforces the leg. The leg alone, although not so strongly, has a like effect. We shall, therefore, limit ourselves to explaining the effect of the spur.

We recollect that the pelvis articulates by the aid of the sacrum with the last vertebra of the loins. As the sternum and the true ribs form an immovable whole with the vertebral column, we easily perceive the important functions of the muscles of the abdomen, which are attached at the forehand of the sternum and at the hind-quarters to the pelvis.

In general the muscles of the abdomen support, indirectly, the vertebral column, when it is curved by the contraction of the muscles of the back.

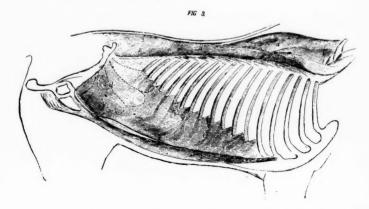
If the muscles of the abdomen have their fixed point at the forehand when contracted, they articulate the pelvis, and by so doing bring the hind-quarters toward the center.

From this we can explain the effect of the spur in the following manner:

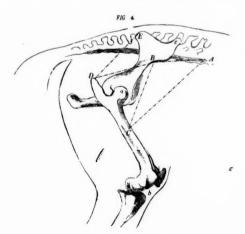
The spur stimulates the superficial muscles of the abdomen. The deeper of these muscles help to bring the hind legs forward when their fixed point is near the forehand.

Under the skin we find among others, the obliquus abdominis externus. It commences near the fifth rib, extends the length of the stomach, and ends near the angle formed by the hip and the pubis (Fig. 3c).

Then follows the rectus abdominis. It extends from the sternum to the pubis (Fig. 3b).



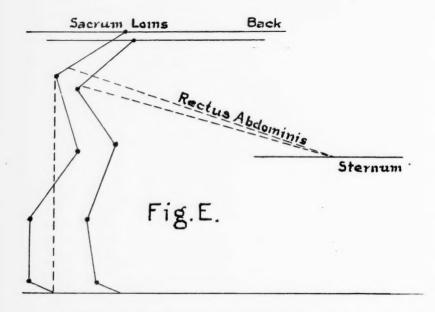
In contracting, these two muscles make their fixed point near the ribs and sternum, bringing the pelvis forward and in so doing the entire hind-quarters (Fig. 1).



They are assisted in this by the obliquus abdominis internus (Fig. 3d) and by the psoas parvus, which extends from the loins to the hip, when their fixed point is near the loins. If, on the contrary, they make their fixed point near the hip,

they prevent the muscles of the abdomen in acting too strongly, and forcing the back to raise itself too much.

In order to bring individually the hind legs forward, the horse contracts the psoas magnus, which extends from the loins to the femur and the iliacus, which extends from the ilium, last lumbar vertebra and sacrum to the femur. It is especially by these two muscles that the femur is flexed at the hip joint.



All flexions of the hip joint have as a direct consequence the flexion of the stifle, hock, pastern, and foot.

Knowing the preceding, we admit, as it appears to me, that the prick of the spur, received directly by the superficial muscles, is transmitted from there directly or indirectly by the nerves to the two principal muscles of the abdomen mentioned previously; hence the rectus abdominis has a predominating influence in bringing the pelvis forward, as in the rassembler and all forward movement.

The spur is the great accelerator of the flexors, not only of those of the abdomen, but of all the others, and produces a harmonious relation between them.

As the horse puts himself in rassembler by contracting the flexors and as "the rassembler is the correct position preparatory to all movement," we can readily understand to what extent the spur is a powerful aid to the rider, when he understands its use.

When the muscles of the abdomen contract, the muscles of the back relax and vice versa. These muscles are antagonistic, and in order to contract one the animal must relax the other.

If the long muscles of the back (longissimus dorsi), which are situated on each side of the vertebral column, contract, the back becomes concave; and if they relax, it becomes convex.

The contracted muscles of the back correspond to the relaxed muscles of the abdomen; and the relaxed back to the contracted muscles of the abdomen.

Plinzner and many others believe the contrary. Consequently he errs in his statement of the movement of the back. He believes that when the back is convex the muscles are contracted, and when concave they are relaxed. In fact it is just the opposite.

In order to understand completely the effect of the spur, it is of interest to know that the muscles of the back are in direct relation with the gluteal muscles of the croup, which concur with the other extensors to communicate to the body the forward impulse in opening all the locomotive angles.

In locomotion, the alternate closing and opening of the angles corresponds, respectively, to the contraction of the flexors and the extensors.

A part of the muscles of the back extend toward the neck (Fig. 2a'), ending near the second cervical vertebra. In general, all the muscles of the neck which extend it are found above the cervical vertebra, while those which flex it are found below; consequently the muscles under the neck are the antagonistics of the others. One can now readily understand how and to what extent the flexors of the neck are in

direct relation with the muscles of the abdomen, and in some way congeners with them; while the extensors of the neck are generally congeners with the muscles of the back

In all the vigorous movements of the horse, the motive force manifests itself very visibly by its function of support, followed by its function of propulsion. The longissimus dorsi, the gluteals, and the extensors of the neck and head cooperate as agents of propulsion; while the muscles of the abdomen, the flexors of the croup, hind legs, neck and head, with the psoas muscles, all working very actively and in harmony, as agents of support.

It is necessary to use the spur and the leg also as near the girth as possible. The impulse then given will make itself felt in the most efficacious manner.

According to our way of looking at the question, the spur, well employed, is, or should always be, an aid, because even when one uses it repeatedly and vigorously, in such a manner that it becomes a punishment, the object is no more than to obtain the contraction desired. Hence, the direct effect must be that of obedience.

It is not without importance to observe that the horse, from the effects of the spur, brings his hind quarters forward as far as possible; and in order to obey the aids, to send the center of gravity still more to the rear so as to raise the forehand from the ground, he will use the long muscles of the back, making their fixed point near the croup.

It is then that the muscles of the abdomen, together with the gluteal and psoas muscles, will all contract so as to assure to the longissimus dorsi the fixed point which it needs to enable it to raise the forehand.

Finally, in order to get the most out of the locomotion of the horse, it is of great importance to have always present an ardor or willingness on the part of the animal. In all the vigorous movements of the horse, the flexors of the neck, head, and croup, with the psoas muscles, must work in harmony with the powerful muscles of the abdomen; just as the extensors of the head, neck, and croup (gluteals), cooperate with the powerful muscles of the back.

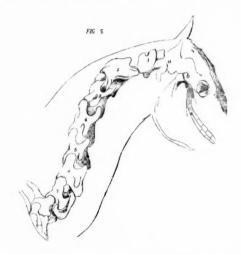
THE REINS (BIT AND BRIDOON) AS AN AID.

The articulation upon which the reins act are:

- 1st. The maxillary joint of both sides (Fig. 5 b).
- 2d. The occipito-atloid joint (Fig. 5, a-1).
- 3d. The atlo-axoid joint (Fig. 5, 1-2).
- 4th. The articulation of the other cervical vertebra.

We can explain the effect of the curb or of the bridoon, by means of the reins, in the following manner:

In tightening the reins, the bridoon and more strongly the curb, presses upon the bars of the lower jaw. In order to escape from the disagreeable sensation caused by this pressure the horse separates the lower jaw from the upper



jaw by means of the sterno-maxillaris muscle, which extends from the sternum to the lower jaw. In contracting, this muscle makes its fixed point near the sternum. If at the same time the horse relaxes the masseter muscle—which binds the two jaws—he will open his mouth.

In this case he may continue to contract the extensors of the neck and muscles of the poll at the same time. The horse seeks to escape as much as possible the effect of the bit—if he contracts completely the sterno-maxillaris and at the same time the masseter, the extensors of the neck become relaxed and the flexors can contract (direct flexion).

Then the mouth of the horse will only open a little, and will remain so for an instant. The getting in hand will be perfect. This is direct flexion, which is incontestably one of the best means of obtaining obedience from the horse, and the first condition of all good equitation. It overcomes the resistance at the poll, which annuls all action upon the hind-quarters. We may say that the resistance at the poll closes the door which opens upon the hind-quarters. It is, therefore, a very great advantage to overcome this resistance.

We can overcome the tendency of the horse to open his mouth too wide by the use of a nose-band.

A well trained horse placed in hand must not separate the lower from the upper jaw more than will be necessary to obtain the flexion desired. He must yield to the least pressure of the curb, only opening the mouth slightly, and should champ (chew, or open and close) it at the same time.

From what has been previously said on the displacement of the head and neck in order to carry weight to the rear, we can readily understand the great importance of direct flexion when we wish to rassembler the horse. The true rassembler cannot exist without the head being flexed on the neck.

LATERAL ACTION OF THE REINS.

If the reins are employed laterally, not only the poll, but also the neck, flexes laterally, and, as little as this may be, the horse must relax the muscles of the poll and neck of one side and contract those of the other side, in order to obey the reins of the latter side.

As we have previously said, the muscles which have been antagonistic in the direct flexion are congeners in the lateral flexion, as they are found on the same side of the neck. For example, in the right lateral flexion, the extensors and flexors situated on the right side of the neck contract so as to obtain the lateral flexion of this side of the neck, while the extensors and flexors found on the other side relax.

The lateral flexion is correct if it is made at the poll without the neck bending. Hence, all that we have said only relates to the muscles of the poll.

For the effect of the reins in the changes of direction, we induce the horse to carry the weight of the head and part of the neck towards the side toward which we wish to go. This is, therefore, nothing more than a transfer of the weight in order to displace the center of gravity.

DIAGONAL ACTION OF THE REINS.

In regard to the reins as an aid, it is of importance to note that they act diagonally upon the hind-quarters; that is to say, the right rein upon the left hind leg, and the left rein upon the right hind leg. When using the reins in this manner the head must not be displaced laterally.

We can understand this in recalling the effect of the opposite rein, which we use in order to keep a horse steady when he fears any object.

If, for example, the object which he fears stands to his right, it is not by the right rein and left leg that a skillful rider prevents him shying around it, but by the left rein and left leg, in order to hold the right hind leg near the object that the horse wishes to avoid.

For the same reason in all changes of direction and turning movements, and especially in the pirouettes, it is necessary to use the outside rein or rein of opposition (or of support) in agreement with the inside leg of the rider, so that the pivot—the inside part of the hind leg—does not deviate.

This does not prevent the change being principally indicated by the inside or direct rein; nor the use of the outside leg of the rider to prevent deviations of the croup to the outside.

All other ways of handling the horse we reject absolutely, as they are only conventional, and in consequence entirely dependent upon the good will of the animal. The use of the direct rein brings the head of the horse towards the side we wish to go, and procures obedience by the displacement of his center of gravity.

The manner of using the reins determines whether their effect will be lateral or diagonal.

It is generally believed that if a horse does not obey to one rein, the resistance is from the same side. This is a gross error. If the horse does not give, for example, to the right rein, it is from the left side that he resists by contracting the muscles of that side. If he gives to the pressure of the right rein, it is caused by the pressure giving him a certain amount of pain on the right bar, which in order to escape he relaxes the muscles of the left side of the neck, especially at the poll, so that the muscles of the right side can contract. He then turns the head to this side, or he obeys the rein.

It is generally recognized that every horse has an easy and a difficult side. If the horse does not give to the aids of the difficult side, it is not because he does not contract the muscles of that side, but because he contracts too strongly the muscles of the other side instead of relaxing them.

It is hence true that the resistance accumulates in the easy side and not in the other, as is generally supposed.

Although we can obtain the contraction of the muscles of the difficult side, by the aids of that side, we can also, if the horse resists with tenacity, facilitate the contraction wished by relaxing the antagonistics on the other side by use of light cuts of the whip, or hand, or by rubbing, at the place where these muscles are found.

This relates equally as well to the extensor muscles of the neck, situated over the cervical vertebra when they contract so that the flexor muscles found underneath cannot contract to obtain the direct flexion.

It is necessary to enter too deeply into the details of anatomy in order to explain more fully what we recommend.

Finally, it may be said that during training it will always be necessary to represent to the mind the position that the skeleton or a part of it must take in order to satisfy our demands. This will help us in our control over the muscles, so that we can obtain different attitudes in place or in motion. After having read the preceding, we can well say with the Germans: "Grau ist alle theoric." We are the first to give the place of honor to practice.

However, we agree that theory must complement practice, and that the proper time to apply theory is necessarily at the beginning. Theory enables us to account for what we demand in training or riding a horse, and especially in order to know if the means we employ will produce the results

For all serious riders, who like to know the reason why, it is pleasant and interesting to think about what we demand, and to reflect or consider on the means we employ to make ourselves understood by the horse in accounting for our aids.

It can only increase the confidence in the methods the rider uses when he knows that they are founded upon logical and rational principles.

On the whole, in order to vanquish the resistances of the horse it is necessary to know what means he employs to resist us. Theory must be the guiding star of our practice.

HOW SHOULD MILITARY HISTORY BE STUDIED?

A PRACTICAL EXAMPLE TAKEN FROM THE SOUTH AFRICAN WAR, 1899, AND INTENDED

AS A GUIDE FOR INDEPENDENT STUDY AND AN AID TO THE DRAFTING

AND SOLVING OF PROBLEMS AND CONDUCTING OF WAR GAMES.

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INTRODUCTION.

MILITARY HISTORY is an unexcelled teacher for the tactician. This statement must be somewhat modified, however, for it will ever remain a fruitless study to the superficial reader. In order to obtain actual instruction from it we must search the records critically and ponder them long and earnestly.

The primary aim of this little work is to teach the correct method of doing this.

To evaluate correctly and to understand the true relation between cause and effect is a difficult task. The beginner especially is prone to allow his judgment to be too easily influenced by success or failure, losing sight of the fact that many a victory has been gained in which the decision has fallen to this or that side not because of, but in spite of the tactics of the victors.

The layman likewise frequently falls into the habit of insisting upon formulating hard and fast general principles from particular instances. It cannot be denied that from a multiplicity of cases certain rules have been formulated which have found their final condensation in the regulations—thence the derivation of the word "regulations"†—but it

^{*}Translated from the German, for the Cavalry Journal, by Sergeant Harry Bell, Corps of Engineers.

 $[\]dagger$ The word "regulations" in German has the same stem as the word rule."—Translator.

becomes apparent from their very origin that these possess only an average value. Especially applicable to the realm of tactics is Field Marshal von Moltke's characteristic definition of strategy as a "system of auxiliary means."

The critic is warned thereby to exercise great circumspection in making use of theories and rules as fixed standards of the conduct of war.

Another common error of the dilettante is passing judgment without making sufficient allowance—or even any allowance at all—for the difficulties which surround the situation, fortuitous circumstances, personal relationships, and the element of uncertainty, all of which so vitally affect the issues in the war-drama and yet remain unknown to the reader.

The second aim of this work is to point out these and other stumbling blocks which lie in the path of the critic.

It has besides a third object, which is, to bring forward, from the realistic and ever varying succession of events of war history, subject matter for the "winter study" required of our officers in order to promote their higher education. An engagement of "the arms combined" should preferably be selected as the theme for such study as well as for the war game. New points of view tend to emphasize more than ever the importance of this study, while the fact that it has so far been neglected in our infantry drill regulations, and too commonly also in our practice, serves as a sufficient excuse for urging its adoption as a proper basis for an interchange of ideas between superior and subordinate officers which would prove to their mutual advantage.

For the accomplishment of this aim we believe that we have found in the engagement at Elandslaagte a fitting example. As an historical source we shall herein make use solely of Part 32 of the *Monographs on Military History** "On the South African War from 1899 to 1902, I, Colenso—Magersfontein, December, 1899."

The method which we pursue in working out the meager

^{*}A publication of the Historical Section of the German General Staff.— Translator.

data contained therein and in arriving at conclusions gives the reader, incidentally, the answer to the question asked in the title of this work: "How should military history be studied?"

THE AUTHOR.

Potsdam, December, 1994.

* * *

THE ENGAGEMENT AT ELANDSLAAGTE, OCTOBER 21, 1899.

The General Situation.

"When Sir George White landed at Durban on October 7th to assume the chief command in Natal, the greater portion of the reënforcements from India had already disembarked; the remainder were still on the way, but were expected to arrive shortly. With these reënforcements he had at his disposal over 15,000 well trained troops, thoroughly acclimated to great heat. The battalions, composed only of men belonging to the active army, had from 800 to 900 rank and file each.

"Sir William Simons, hitherto the general commanding in Natal, had considered it necessary to occupy with weak detachments points such as Glencoe and Dundee which were of political or administrative importance. General White took a different view, and proposed to concentrate all his forces around Ladysmith, in order to take the offensive against the presumably separated Boer columns crossing the passes of the frontier mountains. The governor of Natal, however, for political reasons, thought it right to dissuade the new commander-in chief from carrying out his thoroughly sound plan. Sir G. White yielded against his better judgment; he collected, indeed, the bulk of his forces around Ladysmith, but pushed strong detachments of all arms along the roads in the direction of the enemy.

"It was apparently due to political considerations, which are unavoidable in an alliance between two States of equal standing, that all the Boer forces were not concentrated in one theater of war. Their small strength warranted no dis-

persion, but political reasons turned the scale in regard to the choice of a plan of operations. From a military point of view it did not matter whether all the forces should operate in the west against Cape Colony, or in the east against Natal. Both courses offered advantages, but as at that time no definite arrangement between the Boers and the Africanders had been reached the appearance of strong Boer forces might, perhaps, have decided the vacillators and facilitated a general rising. But this idea, which was a good one from a political point of view, is of little importance in the face of the desire to strike a severe blow against Natal, which was hostile to the Boers. The result of these conflicting plans was the decision to invade both Natal and Cape Colony. Of the 50,000 men, ready at the commencement of October, 18,000, under Joubert, assembled along the border of Natal: 2.000 men were in observation at Komati Poort: in the south 2,000 men were on the southern frontier of the Free State. and 2,000 on its northern boundary, while about 8,000 men were in readiness at Boshof and Lichtenburg for the intended investment of Mafeking and Kimberley.

"On October 11, 1899, the time fixed by the ultimatum expired, without a reply having been received from England. The Boers, 18,000 strong with fourteen guns, crossed the frontier of Natal at daybreak in three widely separated columns, while the remaining columns set themselves in movement against Kimberley, Mafeking and Cape Colony. On October 20th, General Symons' detached force at Dundee was surprised in camp by 4,000 men with six guns. By making an immediate attack, however, he succeeded in driving the Boers from Talana Hill, but the British cavalry, which had been skillfully maneuvered to the Boer rear, did not understand how to utilize their advantage and suffered heavy losses. The result of the action had, nevertheless, a depressing effect upon the invaders. General Yule took command in place of General Symons, who had fallen in the attack on Talana Hill.

The Engagement.

"Simultaneously with the Boer advance against Dundee. another column from the northwest, under General Kock, had been charged with the task of cutting off the retreat of the English detachments at Glencoe and Dundee, and had, therefore, occupied Elandslaagte, fourteen miles from Ladvsmith on the Ladysmith Glencoe Railroad. On October 20th General French, in camp at Ladysmith, received orders to occupy Elandslaagte again, to restore the railway and telegraph communication, which had been interrupted by the Boers, and to join hands with General Yule. At 4 A. M. on October 21st, a seven-pounder Natal volunteer battery (muzzle loaders), accompanied by five squadrons of the Imperial Light Horse and one of the Fifth Lancers, moved from Ladysmith on Elandslaagte; at 8 A. M. half a battalion* of the Manchester regiment and a railway construction company followed by train. These detachments united about a mile west of Elandslaagte. The officer in command saw some mounted Boers on a ridge, about 2,200 yards south of Elandslaagte, who appeared to be watching chiefly in the direction of Dundee, whence artillery fire was thought to be heard. At Elandslaagte station there were also some Boers occupied in plundering a railway train."

In the above situation we are immediately confronted with a number of subjects requiring critical investigation: problems involving decisions, the formulating of orders, and inquiry into technical details.

1. Estimate of the Situation of General Yule's Detachment.

The ordering of this detachment to Dundee offers an excellent opportunity for critical study. It illustrates the consequences of intermixing strategy and politics; the dangers underlying operations on the *inner line* and the influence of the strategical situation on tactical operations. The Russo-Japanese War presents à like situation. It was not the tactical opponent Oku who drove back Stackelberg's corps

^{*}The English battalions had eight companies of 100 to 120 men each.

at Taschikao and elsewhere, but rather the army of Nodzu which was operating on its flank.

In his Studies on Clausewitz Lieutenant Colonel v. Freytag Loringhoven clearly proves by examples from military history, how auspicious strategical situations of themselves give a certain assurance of success:

"Even if the defeat of Napoleon at the beginning of the battle of Marengo had not in the end been transformed into entire success, yet the Austrian army, robbed as it was of its communications, could not have made much use of its victory and in all probability only fragments of that army would have been able to have made their way back across the Mincio. Similarly, in the campaign of Ulm (1805), the threatening of the hostile communications served to some extent to counterbalance the situation of uncertainty in which Napoleon found himself placed for several days regarding the enemy. The success of the double battle of October 14. 1806, carried through as it was by the French under such false assumptions, was due primarily to the fact that the Saxo-Prussian army was caught in an especially unfavorable situation. Königgrätz was won by the bold utilization of a situation which proved favorable in spite of all appearances to the contrary, but the foundations of that success were laid in the fortunate preparatory measures adopted by v. Moltke in opening the campaign. By avoiding a premature concentration of the three Prussian armies he preserved their mobility and was ready to take advantage of any possible contingency. The uncertainty of the situation in the days around Metz was of no serious disadvantage to the Germans, for the reason that the strategical situation was favorable to them, their tactical efforts being supported by the fact that the enemy's communications were sorely threatened on August 16th and entirely lost on August 18th."

2. Examination of the Orders to General French.

These orders are not free from objections. Paragraph 51 of F. S. R. is entirely correct in insisting that in orders the most important element should be stated first: this was evi-

dently not done in this case. It should have been the main mission of General French's detachment to cover the threatened retreat of the detachment of General Yule, which, in spite of the success at Talana Hill, was unavoidable. It is true that the accomplishment of this mission demanded, first of all, the dislodgment of the Boers at Elandslaagte. With this mission, furthermore, were intimately connected the opening up of communications with General Yule and the necessity for reconnaissance towards the northwest, from which direction had come the Boer advance troops under Kock. The directions for the reconstruction of the telegraph and railroad lines should not, however, have been given a place of equal importance in the orders as that was but one of many means of fulfilling the real purpose.

It would be very instructive to write out, on the basis of these assumptions, the orders of General White to General French.

3. Should This Order Have Been Given in Writing?

We answer this question affirmatively under paragraph 48, F. S. R., because a written order, more than a verbal one, will induce both the officer issuing it and the one receiving it to study the situation more thoroughly and thereby prevent hasty or superficial action. That verbal instructions form a valuable supplement to written orders, and that their use should be encouraged, goes without saying.

4. Review of the Strength and Composition of the Detachment of General French.

We take this opportunity to point out an error, which an inexperienced and superficial critic often commits, in that he forgets entirely too easily that the commander almost invariably comes to his decision "in the fog of uncertainty" and bases it upon uncertain, contradictory or even absolutely false reports. Colonel v. Freytag has very clearly brought out this difficulty, and the way in which to treat it in the studies mentioned above.

General White will have made, on October 20th, many

confused estimates of the situation, especially as to the strength and intentions of his opponent, just as will many readers of the history.

His measures for October 21st were, in the first place, necessarily dependent upon the situation of General Yule's detachment, the strength of the Boers in Elandslaagte, and also upon the degree of danger threatening Ladysmith from another direction. Besides, he could base his action only upon suppositions, for even the assumed favorable situation of General Yule's detachment at Dundee was based upon a meager report of its success at Talana Hill, and since the communications with that detachment had been lost, the situation there might have changed entirely since that report was sent. Although this uncertainty, the doubt as to the strength of the detachment under Kock, the proximity of Elandslaagte, the possibility of using the railroad, and the disadvantage that even the least defeat would have a political significance, all pointed to the advisability of sending a strong detachment, this measure nevertheless involved another danger, consequent on an additional scattering of detachments of the weak field army, a danger which might even now-without our knowing it-be threatening us from another direction, for instance, from Harrysmith. In this dilemma the actual decision arrived at must be approved. That decision was: to send a rather formidable appearing detachment under an experienced cavalry leader (for such General French proved himself to be in the later course of the war); the composition of the detachment to be such as to fit it for energetic reconnaissance and to enable it to fall back rapidly on Ladysmith, in case of need. The wisdom of attaching to it the nearly useless seven-pounder battery may, however, be questioned. (See No. 17.)

5. Review of the Interruption of Railroad and Telegraph Lines by the Boers.

The Boers acted entirely in accordance with paragraphs 518-525, F. S. R. As it was expected that these lines would, within a short time, lie within their own sphere of opera-

tions, they should have been "interrupted" only. It is of course possible that only the lack of technical skill and the resistance of the English prevented the Boers from thoroughly destroying both railroad and telegraph. This refers especially to the bridge at Modder Spruit, the destruction of which would have been absolutely wrong, merely considering the besieging of Ladysmith. General Kock, furthermore, was not to be considered as an "independent commanding general" in the sense in which the term is used in paragraph 518, F. S. R., and would not therefore have been justified in taking such a measure on his own responsibility. The quick repair of the telegraph line, occurring later on, (see No. 14) shows that the interruption was not a workmanlike one. A detachment with a cavalry telegraph equipment, even if well skilled in its use, might have been materially delayed in repairing the lines had the interruptions been properly hidden. Paragraph 524 F. S. R. requires that place, time and method of interruption of telegraph lines be accurately reported.

6. Examination of the Orders of General French for the Advance.

On the whole these may be called good orders. It was natural that the mounted troops, who could not utilize the railroad for various reasons, should march early in the morning* in order both to cover the necessary repairs by the working party and to make more effective reconnaissance. The latter, however, seems to have been too restricted. We might of course assume, although it is not so stated in the history, that the English patrols kept in close touch with the Boer commando in Elandslaagte (F. S. R. 133) and that by large detours they had gained, not later than daylight on the 21st, an insight into its position and had also established communication with General Yule (F. S. R. 96–105). But from the fact that as late as eight o'clock General French has still to rely upon his own observations in estimating the

^{*}It should, however, be noted that in South Africa the seasons are just the opposite of what they are with us.

enemy's situation, it appears that this had not been done. These omissions can not be justified, but may well be explained by certain difficulties which had to be overcome in the reconnaissance. We read in the history that wire fences made the country, otherwise so favorable for cavalry, difficult for its operations, especially early in the campaign when the necessity of supplying the cavalry with wire-cutters had not been foreseen: the Boers, however, possessed an abundance of these tools. The reconnoitering detachments labored under the further disadvantage that the Veldt offered absolutely no cover, except such as was afforded by occasional trees and scrubby bushes. This fact, coupled with the long range Mauser in the hands of the Boers, made the task of the patrols exceedingly difficult. They were perceived at a great distance by the Boers who lay in wait, ready to fire from behind a rock or bush, and then by a few well directed shots prevented their coming closer.

These difficulties, however, should have been overcome, as the inhabitants of the country were well disposed towards the English.

It would be well worth while for a cavalry officer to take up and study, say as part of his winter work, the leading of two strong officer's patrols, which should have been sent to both flanks of the Boer position. The history adds valuable suggestions in regard to this: "In any case, the cavalry will in future have to utilize the horse rather as a means of transportation as its reconnaissance will, in the end, have to be made on foot. This will frequently be possible only by employing part of the reconnoitering party for fire action while another part tries to get closer to the enemy, utilizing all available cover."

We shall do a serious injustice, however, to the *main body* of General French's cavalry if we reproach them for having made no attempt at reconnaissance until the arrival of the infantry at 8 A. M. Calculation of time and distance shows that that was a task impossible of execution.

7. Consideration of the Point of Assembly of the Detachment.

This point was an exceedingly unfavorable one, lying as it did in the open country within range of a hill which should have been regarded as a natural position of defense for the opponent. (See 11b.)

8. How Should General French Have Estimated the Situation, on the Basis of his Reconnaissance?

The task set him, the uncertainty over the fate of the detachment of General Yule, the artillery fire heard from Dundee, the attention directed to that point by the Boers, the necessity for reconnaissance and for opening the railroad, should have induced a further advance, and an attack in case of resistance.

9. How Should a Further Advance Have Been Made?

The advance directly from the point of assembly to Elandslaagte was very dangerous, as that advance could be well flanked from the hill mentioned above. A frontal attack on that hill was also out of the question. To await in this open spot the results of the reconnaissance was not advisable, as possibly only an engagement could give the necessary information. It would seem to have been better to turn to the north. By this we should have given more force to the reconnaissance on the flank and could, according to developments, have maneuvered the enemy out of his position, or have attacked him from the north and west; or finally, should he have been found too strong, we could have taken up a position in readiness and, continuing the reconnaissance, have awaited reënforcements. Accordingly, the battery would have had to open fire from the hill one and one-fourth miles northwest of the station at Elandslaagte: the half battalion would have been left in its vicinity-for the battery's protection—to cover the retreat and to act as reserve, the Imperial Light Horse would have deployed from the north towards Elandslaagte and the squadron would have proceeded to the extreme left flank.

"General French ordered his battery to fire at the station, and this fire was at once replied to with good effect by a couple of guns posted on the heights 4,000 yards off. Their second round disabled the team of an ammunition wagon, and as the British battery, by reason of the great distance, was unable to reply, it was withdrawn under cover by order of General French. Some inhabitants, who had come out from Elandslaagte, stated that the Boers had only 1,200 men and two guns,* but that they were expecting reinforcements from the direction of Dundee."

10. Examination of the Order of General French to the Battery.

If we could change the history to read that the battery received orders not to fire on the station itself but on the looters, then the orders could be considered correct. If the English had supposed that the main body of the defenders was behind the hills, then, leaving the distance out of consideration, they could not in any event avail themselves of such an extended target to draw the hostile fire. General French did that far better by firing on the only visible target at the station, at the same time directing the attack on it.

11. What Lessons May We Draw From the Activity of the Artillery of Both Sides?

(a) The accuracy of the aim of the Boers created astonishment and causes the reader to ask whether or not the case is a typical one. This we answer in the negative, even if the guns were of the best. The Boer artillery was in an exceptionally favorable position; the kopje commanded the surrounding country; the English stood entirely in the open; the air of South Africa is exceedingly clear and the position of the sun was in the Boers' favor. But in spite of all this and the careful and advance preparation, i. e., determining the range, the result must be considered as an unusual piece of luck. There is no mention of further hits on the battery standing in the open.

^{*} The Boers give their strength as 646 men and two guns.

From reports from the Manchurian War we also learn. e. g., in the battle at Taschikao, that the artillery, firing for a whole day with an enormous expenditure of ammunition, at from two and one half to three miles, did no damage to speak of, and in most cases did not get the range at all. The French searching fire method also shows that even when we have at our disposal a gun with especially high ballistic effect (see d) we do not rely entirely on the precision and the effect of a single shot. Our F. S. R., par. 630. says: "Artillery, which has gained the distance by sighting shots, can endanger the unlimbering of hostile artillery at a distance of 3,000 vards in such manner that under certain conditions an original superiority in numbers of guns will be offset. The decision in an artillery duel at ranges above 3,000 vards is mainly dependent on numerical gun superiority and the interference of other arms."

- (b) The fact that the hitting of the team of the ammunition wagon is regarded as a great achievement, seems to to indicate merely that that wagon was in the immediate line of fire. Even our regulations (par. 226) allow this on occasions, but only under the supposition that there will not be any hostile fire immediately. In accordance with that, and considering General French's carelessness in choosing his position, as mentioned above, it would seem that General French did not expect the Boer commando to have any artillery, or else underestimated its ability.
- (c) We should inquire into the retiring of the artillery. It was entirely correct. According to the history, the twelve-pounder of the horse battery fired time and percussion fuse shells with 3,700 yards time fuse range and an effective range of from 1,500 to 3,000 yards. The seven-pounder muzzle-loader, possibly the 79-cm. mountain gun, had a range of only 4,000 yards and a 3,300 yards time fuse range (Berlin, "Waffenlehre"). Therefore there was no reply possible to that fire. The only other thing to do was to advance to within effective range, which was not advisable. Of course we must not consider it impossible to advance quickly to within 3,300 yards to-day, but unlimbering in an

open terrain is very dangerous, especially when opposed by mass searching-fire according to the French method.

General French had the further reason for withdrawing his artillery, that he could not know then, what the reader now knows, that the Boers had but two guns—another warning to the critic to be exceedingly careful in his judgment.

(d) What lesson is taught by the incident concerning the artillery materiel? The importance of large time fuse range shells is clearly shown. Even had General French opposed the Boers under normal conditions with one twelve-pounder or fifteen pounder battery (range 6,000 yards, time and percussion fuse range up to 3,350 yards) his artillery inferiority would have been apparent in spite of his having had three times the number of guns the Boers had. At the long ranges, on account of their high angle of descent, percussion fuse shrapnel strike the ground without effect.

In logical sequence this leads us to the vital question: "Is the French 97 cm. gun with its greater muzzle velocity (500 to 580 yards),* its longer range (about 9,000 to 10,000 yards), its flatter trajectory and its farther carrying time fuse shell (5,500 to 6,000) superior to ours?"

It cannot be gainsaid that with the flat trajectory and decrease of the conical shower, accuracy in fire is increased. That is of great importance against targets not under cover. But these ballistic advantages are dearly bought, too dearly, considering the increased weight of the gun and decreased effects against invisible targets, *i. e.*, gun emplacements and skirmish trenches; and, on account of the flat trajectory, the firing over the heads of attacking infantry has to be discontinued sooner. (See No. 42.)

For these reasons we shall have to own that the German army authorities are eminently correct when they decline to make a change in the field artillery gun and projectiles. Even the larger time fuse range of the French shrapnel is of no consequence, as at ranges over 5.500 yards an observation will be practicable only in extremely rare cases.+

^{*}The new Krupp gun has 550 yards.

[†]The improved Krupp gun with gun recoil has a time fuse range of 6,000 yards.

12. What Decision Shall General French Now Make?

See 13.

"French, covered by the Imperial Light Horse, retired to the Modder Spruit, and reported at 8:30 A. M. to Ladysmith the result of his reconnaissance. General White resolved to reënforce him at once. At 11 A. M., the Twenty first and Forty-second Batteries, with one squadron each of the Fifth Lancers and Fifth Dragoon Guards, arrived, and by 3 P. M. seven companies of the First Battalion of the Devonshire Regiment, and five companies of the Second Battalion of the Gordon Highlanders came by train, so that French had at his disposal sixteen companies, eight squadrons and three batteries."

13. Review of the Retreat of General French on the Modder Spruit.

It is probable that General French was forced to this decision by reasons unknown to us; the decision was not in accordance with the situation.

The mission assigned him was not executed. We may attribute this to the fact that the mission was assigned under other suppositions and assumptions concerning the enemy's strength. It is to be noted that General French (in other words, this history) designates this movement to the front as a "reconnaissance," although there was no such designation contained in the orders.

Reconnaissances in force have little favor with us; but our regulations in regard to them are not so strict as they often appear at first reading. Par. 134 of the Field Service Regulations reads: "Attacks by stronger forces of infantry for the purpose of reconnaissance are justifiable only as a preliminary to an intended general attack, or when information concerning the enemy cannot be obtained through other means." From this it is seen: The reconnaissance in force of cavalry or by weaker bodies of infantry is not discouraged, and the employment of stronger bodies of infantry is recommended when all other means fail.

General French, it is true, had received information from inhabitants—though according to our views (Field Service Regulations 61, 63, 67) they required confirmation—and he could consider the artillery fire as sufficient result of the reconnaissance, because, knowing the weak force of artillery the Boers had, their opposing him with that arm indicated that they were being met by a superior force.

If this argued against a continuation of the reconnaissance in force, against an attack, there were nevertheless other important reasons why the contact gained with the enemy should not be lost.

Reconnaissance of the hostile position and beyond could have been achieved without an attack. Protected by the plateau west of Elandslaagte the mounted arms could have attacked northward around that place, supported by the artillery—the latter protected by the infantry—and could have gained a view behind the position on the hills and could have reconnoitered towards Dundee and the Mkupe Pass. This latter was all the more important as the opponent could receive reënforcements from those two directions, and, according to the reports of the inhabitants, they expected them. As soon, however, as the retreat to the Modder Spruit was commenced, the reconnoitering patrols had no longer any support, and even the cavalry screen was abandoned.

Further, consideration for the detachment of General Yule required that he should not fall back. The artillery fire, which was thought to be heard, and the action of the Boers towards the north, should have caused him to hold the enemy by all means, and to prevent him from interfering with the retreat. Instead of this, the maintenance of connection with the detachment of General Yule by means of the patrol service, already difficult, was rendered almost impossible by the retreat.

There were, besides, other reasons, as, for instance, the abandonment of the railroad and telegraph line; the political importance of acknowledgment of defeat; and giving the Boers time and opportunity to throw up intrenchments.

From the subsequent course of the battle, after the ar-

rival of reinforcements, which led to an attack on the Boers' left wing, we might justify the retreat; we might also advance as justification for the retreat the necessity of having to water the animals and the necessity for resting the men during the hot noon hours, a most important factor in South Africa. But these excuses come from a cursory examination of the slight sketch. The changing from flank to flank, especially, could have been done without making so large a detour; furthermore, the abandoning of the terrain on the left flank was later on found to be of disadvantage, as that place had to be stormed anew. (See 44 d).

14. Analysis of the Further Measures of General White.

The critic here, as in No. 4, should acknowledge himself incompetent to judge because the decisions of the supreme commander depended on the situation as a whole (unknown to the reader); for instance, on the danger threatening Ladysmith from another direction (as a matter of fact the troops were recalled in the evening) and depended furthermore on the natural and artificial strength of that place. Here also was shown the disadvantage of operating on the inner line. And this may explain why the start of the infantry was delayed until 3 P. M. This would have been an error should difficulties of transportation have been the reason for the delay. Should there have been difficulties, then the infantry - naturally without knapsacks - would simply have had to march; the distance to the Modder Spruit was only seven and one-half miles. We may say in passing that there was no dearth of rolling stock, as is evinced by the transport returns.

The fact that the mounted troops arrived at II A. M. is, considering time and distance, a sure sign that the telegraph had been repaired or that the signal service was good. This was an important hint for the profitable additional activity of the cavalry, the duties of which to-day are so manifold.

Now a smaller matter. According to the wording of the history we might assume that General French sent his report to General White *only after* he reached Modder Spruit; that is of course impossible.

The parti-colored uniforms of the troops seem strange to us. In England, as in Russia, these are very noticeable, and were no rarity in Prussia also in 1866.

"The Boer position was on a ridge south of the railway, which afforded a clear field of fire westwards; towards the north it fell off steeply in terraces to the line, while to the south it subsided into an undulating plain, which extended to the railway bridge over the Modder Spruit, and so suggested a turning movement against its left wing. Boer posts were pushed out in front of the flanks to the right beyond the railway, and to the left on the ridge."

15. An Examination of the Position of the Boers.

Considered in relation to the route of march, the position was a flank position, and so far a favorable one, as on the side facing the enemy it offered a free field of fire and as the artillery position was at a great distance from the English artillery. (Nos. 16 and 17.) It should be noted also that the Boers took possession of the position voluntarily evacuated by the English in front of their right flank as an advanced post (see sketch); and they also had a similar position in front of their left flank. In the campaign of 1881 the Boers had already shown their preference for advanced positions. "In the defense," says the history, "the Boers held advanced positions with a few dismounted sharpshooters, evacuated them at the proper time and fought the main battle in a position in rear, in which the troops were fully protected from the hostile artillery fire. The fire fight was here carried on at short range with a disastrous effect, and the decisive attack was made by the advance of mounted detachments against the flanks of the enemy."

The question of advanced positions is a material one with us, the more so as not much importance is paid to it in Europe. In another publication (Battles of Advanced Troops, Berlin, 1898) we have endeavored to show through military history how incorrect this standpoint is. Events in Manchuria have supported our contention, and in the latest edition of the Tactical Instructions for the use of students at the

military academy, proper attention is given to it by recommending (par. 469) the employment of weaker advanced troops in close terrain, and adding that stronger ones are "not altogether to be rejected." In the chapter on defense also (par. 464), proper measures are taken for the sending out of advanced troops.

The case in hand, however, does not, unfortunately, justify us in going deeper into this subject, because the question here is one of weaker detachments only. The opportunity to employ the artillery for firing upon the masses concentrating at the Modder Spruit was not taken advantage of. (General Ben Viljoen complains that General Kock did not follow his advice in this.)

The history is silent as to whether or not the Boers here utilized their time, of which they had plenty, in throwing up intrenchments, as they did so well and so quickly in the further course of the campaign. The critic, therefore, may pay no attention to this, but nevertheless it is very instructive, as an academic consideration, to compare the requirements of the Infantry Drill Regulations with the teachings of the Tactical Instructions. The former says (par. 52): "The importance of artificial cover is increased considering the effect of present day fire-arms. Constructed in time, at night, and in the right place, it is valuable for the troops and their commander. A main requirement of artificial cover, however, is that it should be the servant, not the master, of the commander. The latter will be the case when the construction of cover is commenced before we are absolutely clear as to our intentions. A premature throwing up of cover is bad, as it obstructs freedom of movement. A commander requires tactical education to know not only how, but where and when intrenching materials and tools are to be utilized."

Paragraph 2 of the Field Fortification Regulations supports this view.

Paragraph 465 of the Tactical Instructions reads:

"As long as we are not entirely clear as to the disposition and distribution of troops, we cannot begin fortifying the position. The utility of field fortifications to day is especially great. When time permits we will always resort to it But it should be remembered that to construct trenches we must come out of cover and that we thereby disclose our position to the enemy, if the latter is sufficiently near. Therefore, under certain conditions, it might be better to do without artificial cover if we cannot prevent hostile reconnaissance parties from gaining a view of the same. Otherwise we lessen the enemy's task, and artificial cover, to be of any actual value, requires much time for construction.

"If, therefore, we wait too long to determine with absolute certainty the direction of the enemy's attack, in most cases it will then be impossible to construct cover. Consequently we will often commence too early with the work, and then have our trouble for our pains, since the earthwork will be useless if the enemy comes from another direction. In such cases there is nothing to do but simply evacuate the position. The larger the position and the opposing forces, the less chances are there that the enemy will pass by the fortified position of an army. (Königgrätz-Lettow-Vorbeck, 1866; part 2, page 421; Wörth, Kunz; Gravelotte and St. Privat, Gen. Staff account, part 2, page 669; From the Danube to Plevna, Trotha, page 25.)"

In our opinion this is to be preferred to the requirements of the regulations. The cases in which, in order to keep the position hidden from the enemy, no fortifications are thrown up, should, however, be only those where no flat trajectory artillery fire is to be feared. (No. 36.)

"After watering their horses the Imperial Light Horse and a squadron of the Fifth Lancers advanced from the right to drive off the Boer outposts, so as to secure a position to the enemy's flank, and to reconnoiter towards Dundee. French proposed to hold the adversary's front with one battalion and to attack his left flank with nine companies and the dismounted Imperial Light Horse. The field batteries were to come into action between these two attacks in order to prepare the way for the assault. On the other wing the remaining squadron of the Fifth Lancers and that

of the Fifth Dragoon Guards, supported by the fire of a battery, succeeded in driving back the enemy's posts north of the railway and in ascertaining the extent of his position on that flank. Colonel Ian Hamilton was entrusted with carrying out the infantry attack. Two of the battalions had been well schooled in India in fighting against the frontier tribes."

16. Consideration of the Measures Taken for Battle by General French.

In general they are to be designated as good. The watering of the horses was a measure of great importance, which General French, during the succeeding course of the campaign lost sight of, to the detriment of his animals.* As six hours had elapsed since the commencement of the retrograde movement, it is to be presumed that the animals had also been watered before.

It was doubtless correct for cavalry and mounted infantry to take possession of the advanced positions on the left flank and carry out an effective reconnaissance, near as well as far. That would screen the movement of the detachment, enable the commander to reconnoiter personally, give the infantry a chance to advance under cover in column of march by utilizing the small depressions in the terrain, and would also allow the artillery to go into position near the enemy at the proper time. It goes without saying that the artillery, if necessary, had to support the mounted troops in driving off the hostile advanced troops.

The history distinctly states that the terrain favored the euveloping of the hostile left flank. That fact might have led to the intention of making nothing but a flank attack and at the same time insure the line of retreat. Without entirely committing ourselves, we find it easy to understand why General French gave the preference to the enveloping movement. It allowed him to bring his numerical superiority better into play, and to utilize to the fullest extent the ad-

^{*}From February 12th to March 13th his cavalry division lost over 2,000 horses.

vantages of combined attack and of concentration of fire. He was, moreover, opposed to an enemy of whose exact strength he was ignorant, who was very mobile and who—and this argued against an attempt to envelop the hostile right flank—might receive reinforcements at any time; all these were reasons which had to govern him in placing his line of retreat beyond danger. For this reason also the artillery, which could go into position only on the hills southwest of the Boer position, had to have a guard.

The sending to the left flank of the two squadrons and the seven-pounder battery (this is omitted on the sketch) was entirely correct. By this we screened our own movements, deceived the enemy, did not hold him at the decisive point, attacked him in the flank or almost in rear, gave more impetus to the reconnaissance towards the position and towards the important roads to Dundee and Newcastle, protected the railroad, telegraph, and line of communications with the detachment of General Yule, and especially threatened the hostile line of retreat. (See 53.)

According to our F. S. R. (par. 279) the appearance of single batteries is the exception. This was an exceptional case, for on account of the numerical superiority the artillery did not have to be confined in a single space; the French artillery regulations have done away also with that requirement.

The grouping of the entire command was fortunate. The center of gravity of the infantry attack was naturally the detachment operating against the flank. That detachment therefore had to receive the most of the infantry and especially the mounted infantry (see 39). Harder to answer was the question whether the seven companies of the strong Devonshire battalion or one of the two weaker battalions should form the frontal detachment. The latter two would have been sufficient had General French assigned them a more passive role, for instance the protection of the artillery and of the left flank, or assigned them a more demonstrative role according to par. 87 Infantry Drill Regulations. By his action in making the frontal detachment stronger, he could

require more of it in battle, and that was consequently to be preferred.

The position of the artillery was in accordance with the terrain. It had the advantage of giving support to both infantry detachments (see 52), of covering the left flank, and did not require much protection; but it had the great disadvantage of being too far away from the hostile position. Of this we shall speak later.

The expression, "to prepare the attack," seems to us incorrect and too one sided. It reminds us that the tactics of the English in this campaign lost sight of the importance of the fire-attack.

We especially condemn General French's directions to Colonel Ian Hamilton to take command of the infantry attack of both detachments. The commander should, under no circumstances, let the main leadership out of his hands; it was his duty to take charge of both separated detachments and to coordinate their actions with that of the artillery. It appears strange that, as shown later (in 50), Colonel Hamilton commanded the battle in the main, while two superior commanders—General White also was present—were more or less spectators. That General French was a cavalryman and Colonel Hamilton an excellent infantry officer may explain the circumstance, but does not justify it.

"Shortly after 4 P. M., while the batteries, escorted by a squadron of the Imperial Light Horse, opened fire at a range of about 3,800 yards against the Boer position, behind which black storm clouds were rising, Colonel Hamilton, taking skillful advantage of cover, led his infantry forward."

17. Examination of the Going Into Position and Opening Fire of the Artillery.

If we compare the text with the sketch, we readily see a discrepancy, as the sketch shows the batteries in position at "a", three miles from the hostile artillery. If this was the case, and if the sketch is correct, then we cannot approve of this first position. As the effective range of the English battery only began at 3,000 yards, as the time fuse shrapnel has

an effective range of 3,700 yards, and the percussion is almost non effective at long ranges (see 11d), they could not expect any results from such long range firing.

It is self-evident that the English batteries had to go as close as practicable to the defender's artillery to silence it as soon and as thoroughly as possible. Par. 354 of the F. A. Drill Regulations emphasizes this point: "The distance from the enemy, in which the artillery first goes into position, is to be based on the commander's intentions, the battle situation, the terrain and the weather; it should, in all cases, be chosen as near as conditions will permit * * *" and Par. 291 says: "The distance from the enemy will often be dependent upon the terrain * * *"

In accordance with these paragraphs, the batteries should and could have gone at once to their second position at "b", which, in the main, was but a little over two and one-half miles from the hostile artillery, and could have been reached under cover. Who should be held responsible for the position the artillery took? According to our views, the commander. It is to be presumed, however, that the faulty maps and the clear atmosphere of South Africa were responsible for his error in judging the distance.

According to our regulations, General French had to order the time for opening fire and the point of attack. The question now arises, what targets were there for the artillery? Wherever the history mentions the "hostile position" we should understand that as being a general expression. There was nothing compelling the Boers to expose either their artillery or their infantry to the hostile artillery fire. Their infantry, without doubt, lay behind natural or artificial cover, which could not be seen even with the best field glasses at a distance of over 3,000 yards. This plainly shows how important it is that the cavalry of the attacking party should gain possession of the foreground of the battlefield early in the battle and be in a position to perceive the throwing up of trenches or their occupation, and be able to report their position both in writing (by sketch) and verbally. And for that reason the attaching of artillery officers to reconnoitering patrols is always to be recommended.

To judge from the sketch, the defensive lines of the Boers were situated on the upper declivities of the foremost kopjes. In the situation in which the detachment under Kock found itself this was eminently correct. The enemy was superior, the flank and even the retreat endangered, and there were no reasons for a stubborn defense. The detachment did not need a good field of fire, and had to lay greater value on the practicability of changing their position and of covering their retreat. The position may, therefore, be characterized as a kind of a rear guard position.

The Boers acted differently, and rightly so, in the subsequent course of the campaign in such positions, which they intended to defend stubbornly, as for instance at Magersfontein. Correctly estimating the effect of artillery fire, they placed on the edge of hill crests only trenches intended to deceive, and placed their infantry trenches proper,

well covered, at the foot of the hills.

Not having any visible targets the English batteries had to feel their way in the hope of drawing the hostile fire; this, in the present case, was a useless hope, as they only revealed their own position.

Conditions would in no wise have been changed had the trenches of the Boer skirmishers been seen. Not counting at all the long distance, shrappel would have had no effect on the Boers lying behind stone trenches, and even our time fuse shell, constructed for just that purpose, is not much more effective against such targets, because it requires a very exact knowledge of the range to make it effective, which, in actual war, can seldom be had. Par. 354 of the F. A. Drill Regulations says in this regard: "It should be kept in mind that the firing of large quantities of ammunition against weakly held field fortifications does not pay. This it is believed will be always the case when the battle is divided into a prolonged artillery preparation and subsequent infantry attack. Artillery fire on trenches will be most effective when combined with infantry feeling its way forward and attacking, and thereby compelling the enemy to occupy his lines and show himself. It is the main duty of the commander

to harmonize the gradual deployment of the infantry with the protection afforded by the artillery fire.

Unless we assume, which we can scarcely do, that the Boers offered themselves, uncovered, as targets for the British shrapnel, the opening of fire by the English batteries from the position at "a" was faulty for more reasons than one. The course of the battle will show us the correct way. (See 22.)

"The First Battalion of the Devonshires was to advance to the left of the batteries against the enemy's front, and the remaining troops were to move against his left flank. Colonel Hamilton remained with the Devonshires, who stayed under cover until the advanced companies of the battalions making the flank attack attracted the attention of the adversary. This was the time for the Devonshires to attempt to cross the open plain."

18. Analysis of the Planned Attack of the Devonshire Battalion.

Paragraph 431, Tactical Instructions says: "It has already been shown that an enveloping movement can be effected only if the center (front) is attacked at the same time and the opponent thereby prevented from moving his forces at will. It requires most specific orders and a mutual understanding to harmonize the frontal attack with the enveloping movement. The former must not be started too soon, before the flank attack can become effective, and even less should we wait until the enveloping movement has actually succeeded." The orders of Colonel Ian Hamilton were entirely in accordance with this paragraph.

We have here a miniature representation of the situation of the Guard Corps at St. Privat. It is well known that this corps should have proceeded to the attack only when the enveloping movement by the Saxons had become effective. But contrary to the plan, and without sufficient artillery support, it prematurely broke into a frontal attack. The attack turned into a fiasco about 600 meters from the main hostile position; still the debris of the corps held the atten-

tion of the enemy and aided thereby the flank attack of the Saxons. The battles of Königgrätz and Liaoyang show the

same thing on a larger scale.

To apply the above models to the battle at Elandslaagte, however, would be wrong, because smaller forces, unlike armies or army corps, can suffer a decided defeat in an instant. (Thirty-eighth Infantry Brigade at Mars-la-Tour; the Forty-fourth Regiment at Montoy.) The "catching" and "holding" of the enemy in front were of necessity, therefore, postponed.

There is besides, another reason for this: As long as the battalion remained half hidden behind the ridge, its presence being only surmised by the enemy, its approximate weakness was thereby kept concealed, and it possibly held his attention more easily than if it had shown itself by ad-

vancing in the open plain.

19. An Analysis of the Direction of Advance of the Devonshire Battalion and the Battle Extension of the Detachment.

To judge from the sketch, the front detachment did not attack the Boer left flank, but turned against the center of the hostile position. This might make success of the combined attack, the combined flank movement and the concentration of fire on the point of attack of the hostile position doubtful, and might compel each detachment to make an independent frontal attack.

On the other hand, the chosen direction for the attack had great advantages. The Boers were contained along a broader front, it protected the artillery better and did not mask it, and, above all, no jump was made in the dark.

It was certainly possible that as soon as the English attacking parties came into contact with the extreme left Boer flank, the Boers might suddenly decline a decision, or it might have happened that the two prematurely joined detachments would again face an opponent frontally, who could then have confined himself to the defense of the northern part of the hill, far from the English artillery.

We can also easily imagine a similar advantage gained in the case of a premature joining of the attacking columns advancing against a strong part of the front.

The battle deployment of the detachment of General French was greatly extended by the direction of attack of the Devonshire battalion; according to the sketch it amounted to about three miles at the first deployment. If the critic will consult the infantry drill regulations, he will find (par. 115): "Rules for the approximate extension of a front of a brigade in battle are furnished by the experience of war. The battle front of a brigade of six battalions at the first deployment should be from 1,100 to 1,300 yards."

In the case of this detachment, which did not even have the strength of a brigade, should we infer from this paragraph of the regulations that it made a serious error in having too great an extension? We answer in the negative.

The number of vards given in the regulations for a battle extension are to be understood only as applying to extension of commands operating in close connection with larger bodies of troops, and should not form a guide for detachments acting independently, engaging in combat in several separated groups. But the above mentioned paragraph of the regulations concerning the extension of front of a brigade is very often erroneously interpreted in practice with regard to battle tactics. In the first place, the figures given are not meant to be normal in all cases, but are to serve merely as a guide; they are the result of experience, and allow of material variation in both directions (see 21). In the second place, they expressly refer only to the first stage of deployment, which, according to the accepted battle tactics, should be small, while during an enveloping attack the line the troops occupy becomes more and more contracted. It will easily be seen that we must be exceedingly careful how we apply that paragraph of the regulations, when we consider further under what varied conditions brigades have fought in various battles.

19a. Choice of Colonel Ian Hamilton's Position.

See No. 41.

20. Consideration of Doing Without a Reserve.

See No. 39.

"Three companies (360 men) were ordered to attack. First of all, scouts climbed the ridge, then from 350 to 450 yards in rear came a thin firing line extended to about 700 yards, which was again followed at a similar distance by the extended supports. The remaining four companies of the battalion remained at first under cover and then advanced by companies in column of route."

21. Examination of the Battle Formation of the Battalion.

It was according to up to date views. The "scouts" recall the requirements of the old French regulations; at the present day they perform the duties of the reconnaissance in the immediate vicinity in front. It is strange that our drill regulations for infantry recognize only the battle patrol on the flank; it might be well, however, to charge "the weak skirmish line" sent to the front with the important duty of reconnaissance. The Tactical Instructions say in regard to this: "Patrols sent to the front for reconnaissance in the immediate vicinity have to supplement or entirely perform the reconnaissance duty of the cavalry. They are utilized to reconnoiter the enemy, to secure against surprise, to drive off hostile patrols, to screen our front, to reconnoiter roads of approach, to observe the effect of the artillery fire, and to protect the commander riding in front."

According to our ideas, the forming of a thin skirmish line was correct, inasmuch as the battalion had to expect long range infantry and artillery fire when crossing the open plain. Major Löffler, in his Quarterly Journal No. 3, page 403, insists on this thin skirmish line, which can also take over the above mentioned duties of scouts: "The first requisite of tactical leadership is never to be taken unawares by hostile fire; to prevent this we know of nothing better than a thin skirmish line thrown several hundred yards to the front of the main force. At the moment this thin skirmish line first draws the fire—or in case there be none, when the hostile line has been seen and reported—the entire remain-

ing force must still be outside the range of the enemy's fire, either covered by features of the terrain or, in the absence of cover, which is rare, protected by the distance. Only then is it possible to send in the forces in accordance with a concerted plan and with due forethought; in other words, to preserve freedom of action."

We need not be afraid to deploy immediately a sufficiently dense skirmish line, which must be firm in its determination to advance as far as possible and to withstand the hostile fire. Whether or not it reaches in this effort the line of scouts ahead of it, is a secondary consideration; the single scouts will have found cover in the terrain sufficient for their own protection.

It is not in accordance with our regulations that the supports of the Devonshire battalion followed the line in open order. But the highest authorities in our army give a certain amount of freedom in this connection, and the *Tactical Instructions* say: "Within effective range of fire, in open terrain, companies in close order can only move in exceptional cases."

But the distance—350 to 450 yards—is entirely correct; the 220 yards distance which our drill regulations prescribe to avoid possibility of a single bullet hitting two ranks at the same time, is to-day insufficient, considering the flat trajectory of modern small arms.

The keeping of the battalion reserve under cover at the start and the manner of its advance also must be acknowledged to be correct. The Tactical Instructions say: "Infantry can utilize the march column formation on the battlefield and keep that formation up to the very moment of entering the battle. Concentration, taking up positions of readiness, deployment for attack, and the utilization of reserves, is facilitated if the infantry remains in march column, in that the several brigades, regiments, battalions, and even single companies, can be drawn out to one side and placed, according to the features of the terrain, either alongside of or behind each other. Columns of sections are best suited for movements within the zone of hostile artillery fire by increasing the difficulty of the artillery in finding the range

with sighting shots, especially if the heads of columns do not march on the same line and the columns preserve large intervals. Only where the terrain is unfavorable for the above formation do we utilize company columns, and even then dense formation should be avoided.

Of course, it is necessary in using this formation that the troops are not under infantry or enfilade artillery fire, as in the case of batteries reserved by the French from the artillery duel, called *batteries de surveillance*.

Where this danger is present, and that is mostly the case at the beginning of the battle, we will do well to allow larger detachments to advance, in open terrain in close column, only after the mass of the hostile artillery has become engaged with our own. That this is likely to be the case in future battles, though in a decreased measure, we shall discuss in No. 22.

The extension of front of the seven Devonshire companies seems too great. (According to the sketch, about one mile; according to the text of the history, 700 yards; which latter seems more correct.) According to our views the battle front of a battalion, after a few detachments have been made, should not be more than 450 yards. And even that may be too much. Had, for instance, the Devonshire battalion been compelled to advance across the open against an equal opponent, i. e., against a dense skirmish line with supports, then even at 450 yards extension the formation would have had insufficient depth. The lines of the Guard Regiments Nos. 1, 2 and 3, at St. Privat, did not have more extension than that, and there only very thin lines got to within 700 yards of the hostile position. There, of course, the manner of the advance was the principal fault.

In the present case, however, we must acknowledge the correctness of the extension of the Devonshire battalion. It is not a question here of an equal opponent, but only of dispersed groups of skirmishers, whose flank is in imminent danger, and who could be kept under fire by superior artillery. On the other hand, an advance with a smaller front would have had many disadvantages, amongst others that of offering the defender the advantage of a concentrated target.

Paragraph 87 of the Infantry Drill Regulations is applicable to conditions of this sort: "Regulations do not give instructions or points of view for battles of all kinds and descriptions; they do not apply to containing or false attacks or demonstrations, which must be separately determined by the commander in each case, as no two situations are alike. The formation and the extension of front and depth will rest with the decision of the commander."

"The two hostile guns endeavored in vain to check the infantry advance. When within about 1,100 yards the skirmishers halted and began to fire volleys at the enemy's position, and the latter replied along his whole front. The batteries utilized this opportunity to change position by advancing about 1,650 yards. The supports, under cover of the now more effective artillery fire, which silenced the Boer guns, reinforced the firing line, and advanced at quick time until within about 750 yards of the enemy."

22. Review of the Combined Action of the English Infantry and Artillery.

The advance of the Devonshire battalion is not entirely in accordance with Par. 82 of the Regulations, in reference to a planned attack. It says: "At the start the artillery should strive to gain fire superiority; it has to open the road for the infantry attack." This was here impossible, because the attacking artillery was unable to engage the opposing artillery; the infantry only succeeded in doing that by its advance. It is an illustration of the views of General Rohne: "It (the infantry) must advance against the hostile position with the knowledge that it will thereby draw the fire of the artillery."

Pars. 443-4 of the *Tactical Instructions* are very instructive, although applicable to this case in part only:

"* * The commencement of the *infantry attack* can, as a rule, not be delayed until our own artillery has gained the fire superiority and is in a position to hold down the hostile artillery with a part of its batteries and to fire on the hostile infantry and the point of attack with the other

part. Such a definite superiority of one artillery over the other, will in future seldom be the case. It is rather to be assumed that, like the infantry battle, so also the artillery duel will sway from side to side; at one point we may gain a certain superiority; at another we may with difficulty hold our own; at still some other point the sudden appearance of new batteries may change the entire aspect of things. Batteries having shields are hard to silence completely. And therefore, the infantry can not always wait for a decision in the artillery duel * * *

"The battle of the artillery and infantry will not take place hereafter, one after the other, but alongside of one another. If the attacking infantry has completed its deployment as far as is desired, it can then start to utilize time, while the hostile artillery is busily engaged with our own. Should the enemy, in spite of this, fire on our infantry with part of the batteries engaged with our artillery, or with a newly appearing battery, then our infantry's movement will for the time come to a standstill, but the hostile batteries which have hitherto been partly or wholly concealed, will be forced to leave their cover and to come to the ridge of the hill; a change which is not easy and which may lead to the annihilation of those batteries " * *."

Of this more in No. 24.

23. The Devonshire Battalion Had a Total Loss of but Four Officers and Twenty-nine Men. How is Such a Small Loss Accounted For?

- A. The losses by artillery fire could be but insignificant:
- 1. The battalion advanced in invulnerable formation.
- 2. The average space covered by shrapnel bullets at 3,300 yards range is about sixteen yards. The two guns, therefore, covered a space of about thirty two yards; that means but the twenty second part of one of the three echelons of the first line.
- 3. The two Boer guns stood under cover, and could probably not fire directly on the approaching skirmishers. Firing on approaching targets is difficult.

4. The shrapnel bullets do not place a man hors de combat when their velocity is less than 110 or 140 yards.*

B. Losses by fire of the Boer infantry: See No. 26.

24. On What Should the English Artillery Have Fired During the Advance of the Devonshire Battalion?

Paragraph 312 of the F. A. Drill Regulations says, in italics: "Without regard to possible losses that object must always be fired on which is the decisive point on the field of battle." This rule is still unassailable, and every one must acknowledge that the silencing of the hostile artillery is of the utmost importance to the successful outcome of the battle. But gun shields and covered positions are instrumental in causing the artillery duel to take a hesitating and indecisive course. This shows that in such cases artillery may without doubt direct its fire on other targets and not only (as required by regulations) on formations in close order, when the artillery duel is indecisive. The combined action of infantry and artillery, as illustrated for instance in No. 22, is thereby made easier. The French regulations are radical in this respect by directing that only a part of the artillery is to engage in the artillery duel, while the other part lies in concealment, as batteries de surveillance, to fire on any part of the enemy showing himself in the open, no matter what arm.

Conditions at Elandslaagte were very much simpler for the English artillery in so far as it was not fired on at all. It, therefore, could direct its fire on just that object which seemed the most dangerous for the infantry. This object at the start was the hostile artillery, later on the hostile infantry. In case both objectives could not be reached, on account of the long range or because they were hidden, then a change of position had to be made (see 17 and 29).

^{*}At Poplar Grove the shrapnel fire, under which the French division got, was without effect because the penetration power of the bullets was so small that men and horses hit by the bullets carried off only swellings. A few unofficial accounts of the Manchurian War give a different account. The German shrapnel bullet weighs ten grains, the French twelve grains.

25. Consideration of the Employment of the Boer Guns.

Of the objects offered as targets, the two Boer guns had to consider the English artillery as the most dangerous enemy, because it could enflade the Boer infantry which faced the English flanking detachment. Weak skirmish detachments were sufficient to attend to the Devonshire battalion advancing across the open field, because their depth was not great. It was, therefore, an error on the part of the two guns to betray their position uselessly by firing on that battalion, especially as they could not expect thereby to gain any material success (see 23). It was of far more importance to look after the English artillery and to catch it while changing position (see 29).

It would have been the best plan to have prevented such a change of position. In this sense, and considering their ballistic superiority, it might have been best to take the English batteries under fire at once and prevent their being moved. But it may have been true that the distance was too great even for the Boer guns.

26. Inquiry Into the Activity of the Boer Infantry.

We find in the narrative account that the Boer infantry opened fire only when the English skirmishers had come to within 1,100 yards range and had themselves opened fire. But this is contradicted in the final discussion of the battle, according to which "the Boers had used their rifles up to almost their extreme limit of range." To have reserved the fire would have been faulty, for it was evidently necessary to hold the English center detachment at a distance, considering the Boer weakness and the danger threatening the Boer flank, the more so as the English batteries at that time were firing without any effect from their first position.

If the latter had not been the case, or if the English battalion, as later at Magersfontein and Colenso, had advanced carelessly, then it would have been correct to have held the fire and preserved secrecy in regard to the position until the attacking party had come to within point blank range.

The reason that the English infantry was enabled to move in quick time without material losses (see 36) from 1,100 to 750 yards distance from the Boers, may be attributed to the fact that the English artillery fired with effect from its second position on the Boer trenches, and that therefore the Boer skirmishers had to keep under cover. It was to be expected of the latter that they would take up the fight in earnest as soon as the English infantry came within point blank range, when a decision would be quickly reached, and that in the meantime the English artillery fire would have to be endured for a short time, or until it would have to cease because it could no longer fire over the heads of its own attacking infantry.

If we consider that the two English batteries covered a front of 220 yards, according to our regulations, and 440 yards according to the French, then a large part of the Boer sharpshooters could have fired without danger.

The small losses the English sustained may further be ascribed to the tenuity of the skirmish line and to the small number of defenders, who for the most part consisted of courageous but raw German and Dutch volunteers from the mining districts.

27. Was It Correct for the English Skirmishers to Halt at 1,100 Yards From the Enemy?

Paragraph 82 says: "The general rule is for the advanced line to get as close to the enemy as the terrain will permit, before opening fire." Considering this rule and the small loss of the English, we might conclude that the skirmish line halted too soon.*

Taking into account the flanking detachment, the line could have easily advanced a few hundred yards further, but on the whole its halting where it did must be acknowledged

^{*}Par. 623, F.S. R., was not applicable in the present case: "Skirmish lines moving in the open, and fired on by infantry which is not itself under fire, will suffer considerable losses when within 1,100 yards of the enemy; longer rushes to the front will, therefore, as a rule, be practicable only if well supported by fire."

to be correct. The line had principally to consider the point so well stated in Par. 354 of the F. A. Drill Regulations, which unfortunately is not mentioned in the Infantry Drill Regulations, namely: "It is the main duty of the commander to harmonize the gradual deployment of the infantry with the protection afforded by the artillery fire." The infantry had made good forward progress; had thereby forced the enemy to show himself, and it was now the task of the artillery to gain a position from which it could keep down the hostile artillery and infantry fire, principally the former. (See 29)

28. The Volley Fire of the English Skirmishers.

This is not in accordance with German views. The reasons are well known.

29. The Change of Position of the English Batteries.

As a general rule, the movements of infantry in open country are carried on under the protection of artillery, either firing or in readiness to fire. According to this rule, the English batteries acted correctly in so far as they could reach the hostile guns and skirmishers. Could this not be done, and that is to be presumed here, a change of position had necessarily to be made, as soon as it was ascertained that the range was too great. Only then could the Boer guns and sharpshooters be taken under fire while they were firing on the advancing infantry, and the latter thereby effectively supported. The expression in the history, "the batteries utilized this opportunity," is consequently not easily understood.

30. Who Should Have Directed This Change of Position?

In the case in hand, it was merely a question of a change of position, as provided in Par. 340, F. A. D. R., because it was not of much importance, and only necessary for "better effect or cover." Such changes of position can be ordered independently by the artillery commander; in all other

cases, where the change would be a material one, the commanding general would have either to give or to approve the order.

31. How Should the Change of Position Have Been Executed?

In this case it was best to bring the two batteries simultaneously into a new position, and not—in accordance with F. A. D. R., Par. 341—by sections. The reasons are obvious

32. What Should Have Been the Objective of the Artillery in its Second Position?

This should have been, without doubt, the hostile artillery, even if it were not in plain view. Up to 1,100 yards the Devonshire Battalion did not require any support against the hostile skirmishers. Only after the hostile artillery had been silenced should the infantry positions be taken under fire. Under cover of this fire and continuous observation of the Boer guns, the English skirmishers could then advance further to reach their objective, as we show in Nos. 36 and 42.

33. How Should the Infantry Positions Have Been Fired On? By firing by sections. (See No. 26.)

34. What Should Have Been the Course of the Artillery Duel?

. According to the sketch, the artillery lines were separated by nearly 4,000 yards, a distance at which even the most modern guns do not easily gain fire superiority (see 11a). In this case the numerical superiority was not so great as to justify the hope of gaining the victory very early.

How should the Boer guns have acted, in view of this? The answer will be seen in No. 45.

35. In Considering the Artillery Positions, Should We Take the Text of the History, or the Sketch, as Being Correct?

The text must be considered as erroneous concerning the positions of the artillery. According to it, the first position was at 3,850 yards; the second was 1,650 yards closer, therefore at 2,200 yards. The last position is said to have been within 2,100 yards, which cannot be correct, for artillery would not change a hill position for the sake of 100 yards.

Even the explanation that the scale of the sketch is wrong is not correct, for from (a) to (b) the distance is actually 1,650 yards. Of course, it is possible that, in addition to the text, the sketch may also be wrong.

For all this, the history is to be held less responsible than the English sources.

36. Consideration of the Further Advance of the English Infantry.

The advance of the skirmishers from 1,100 to 750 yards seems to have been made, and properly so (see 27, 32), only after the English batteries had begun firing from (b) on the Boer skirmishers. Consequently they were but little or not at all fired on (see 26). Under these favorable circumstances, they could and should have advanced at quick time, according to our Infantry Drill Regulations (Par. 47): "If it is possible, considering the effect of the hostile fire, to advance without halting, that should be done under all circumstances, and consequently, in maneuvers, the advance by rushes should not begin at long distances, nor should it be exercised as the only manner of crossing level terrain."

There is room for argument, however, in that the skirmishers again halted too soon. The hostile fire, as is shown, did not interfere with the advance, which remained too far away—750 yards—to gain a fire superiority, or to endanger the enemy sufficiently to cause him to show himself above his trenches as a target for the shrapnel of the artillery. This is required by the F. A. D. R, Par. 354: "The shaking of hostile points of support can take place only after the hostile artillery has been defeated. The concentration of fire on

points, important according to location, or according to the views and intentions of the commander, must take place in connection with annoying adjacent points, and the further keeping down of the hostile artillery.

"It should be kept in mind that the firing of large quantities of ammunition against weakly held fortifications does not pay. This is usually the case when the battle is divided into a prolonged artillery preparation and subsequent infantry attack. Artillery fire on trenches will be most effective when combined with infantry feeling its way forward and attacking, and thereby compelling the enemy to occupy his lines and show himself. It is the main duty of the commander to harmonize the gradual deployment of the infantry with the protection afforded by the artillery fire."

There may, however, be an excuse for the English infantry halting as soon as it did, in the fact that the hostile artillery had not at that time been silenced. But consideration of the flanking column should have caused the line to advance nearer to the enemy.

It seems premature for the skirmish lines to have been reinforced by their supports at 1,100 yards. But we must consider that the English skirmish lines would only then have reached our regulation density, and that it is perfectly correct to form denser lines when we desire to gain the fire superiority at effective distances, in order not to engage superior forces with inferior. Furthermore, there was nothing in the present case to compel the English skirmishers to gain ground in the so-called "Boer manner."

37. Based on Nos. 16 to 36, a Thorough Description Should be Given of the Supposed Course of the Battle.

Such a task is exceedingly instructive and suitable for winter study. Our questions and answers show how much can be read from and between the lines of a short report of a battle.

"The advance of the turning force was greatly facilitated by the bursting of the long threatened thunderstorm."

38. We have here an addition to the chapter on frictions

and chances, which, as Clausewitz says, "are never taken into proper consideration on paper," but which have to be considered carefully by the critic.

"The Imperial Light Horse, Gordons and Manchesters soon mixed themselves up into one single, thick firing line, which advanced in continuous rushes of about 40 yards, as laid down in the regulations, against the enemy, who was effectually held fast in front and flank."

39. Consideration of the Advance of the Flanking Group.

The premature mixing of all the troops, and the advance in a single line can not be called good. It undoubtedly occurred by the nine companies of Gordons and Manchesters rushing into the widely extended line of the Imperial Light Horse and carrying that line forward. It would probably have been better if the two battalions had been put into one line alongside of one another, and the Imperial Light Horse had been kept back as French's reserve. It could then, later on, according to necessity, have supported the first line, and could have more effectively attacked the enemy in his rear, cut off his retreat, or opposed counter attacks (see 43 and 44). In the present case, however, the attacking group might have done without the regulation depth, and the commander might properly have had as his aim the preparation of a Sedan for the weak and isolated Boer detachment.

The history criticises in a similiar manner the employment of the mounted infantry at Magersfontein: "The cavalry and mounted infantry were employed solely as infantry, but, much as their support may have been desired in that capacity, it would certainly have been better if the mounted troops, with machine guns and the battery of horse artillery, had been sent to act against the flank and rear of the Boers. Even if their dismounted action were justifiable until the arrival of the guards, it was no longer so when a sufficient force of infantry had been brought up, and the attempt could still then have been made to operate against the flank and rear of the enemy. This might well have suc-

ceeded, because the latter had left their horses a long way to their rear."

That the English line advanced without halting in short rushes, may have been in accordance with the situation, and may have been in harmony, especially with the advance of the frontal detachment and the activity of the artillery, which could effectively enflade the south front. But we should remember that flank attacks can not and should not take such a rapid course in all cases, and also that with them the less the attack is aided by the element of surprise the more important becomes the necessity for careful fire preparation.

"The batteries advanced simultaneously to within 2,100 vards of the Boers."

40. Consideration of the Advance of the Batteries.

This may have been necessary because the storm shortened the view, and it is possible that the range was still too great even for the English guns. Under normal conditions and considering the effect of modern arms, it is not to be recommended as a general rule to stop firing at such a critical point, to change a high position for one in the valley, and thereby run the risk of the fire of the hostile artillery appearing at a new point. For these reasons, if a change is made, it should at least be done by sections.

The requirements of par. 347, F. A. D. R., that single batteries, for material as well as moral reasons, should accompany the infantry attack to the most advanced and effective position, do not apply in this case, but rather par. 346, which says: "It is of advantage if the point of attack can be taken under fire from a position allowing direct fire, or from a flank position; for then a change of position will be unnecessary, as long as the main factors of proper fire control—discernment of friend and foe, scattering of the projectiles, observation of hits, etc., preclude the endangering of our own troops."

"Colonel Hamilton, who had hitherto commanded the frontal attack, now betook himself to the right wing and ordered the assault."

41. Consideration of the Method of Command.

In No. 16 we have emphasized the fact that each one of the battle detachments should have had a special commander. As the flanking detachment was the stronger and of more importance, Colonel Ian Hamilton should have gone to it much earlier. Then the attack at that point would have probably run a smoother course.

It is strange that nothing appears here or later of the part taken by the actual detachment commander. General French should have retained for himself the disposition of the Imperial Light Horse, should have directed its movements, and should have also directed the coördination of the infantry and cavalry detachments with the artillery. His station was with the artillery at the start, later with the right flank.

This case teaches also the importance of giving cavalry and artillery commanders training in the command of mixed detachments.**

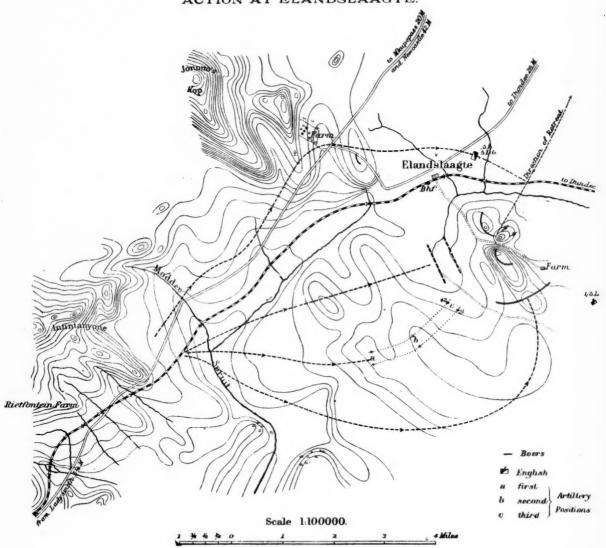
"The skirmishers had to traverse a distance of about 300 yards to reach the position. The signal was taken up along the whole line which, firing as it advanced, succeeded in penetrating into it. The two Boer guns had again been brought into action to repel the charge, and they were captured."

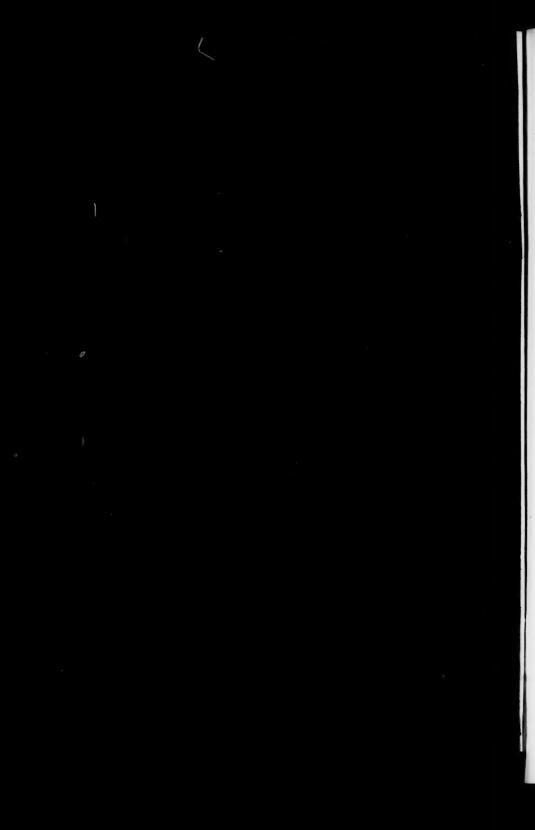
42. Analysis of the Charge.

The distance of the charge, 300 yards, may be considered typical. The infantry should not interfere with the possibility of the artillery's firing on the hostile infantry position up to the actual commencement of the charge. Under favorable terrain conditions, as was the case here, and when there is a good view to be had, the artillery of the attacking party could fire very well over the heads of the infantry at that distance. Should this be impracticable, its own interests demand that it should remain farther to the rear. French writers give for a battle on level ground 550 yards for this.

^{*}In England maneuvers of the arms combined in variable terrain are rare.

ACTION AT ELANDSLAAGTE.





That more ground has thereby to be covered in the final charge is of little importance if the demoralization of the enemy is made more complete and our own powers for the last effort are correspondingly saved. For the rest, the infantry must, for the same reasons, be prepared in such cases to receive here and there a shrapnel. In this sense, on page 67, the history criticises an occurrence in the battle of Paardeberg: "* * and it was a particularly grave error that the battery on Signal Hill, which had at first, by its very effective enfilade fire against the Boers at the river bend, rendered such powerful aid to the advance of the Nineteenth Brigade, should have at once ceased firing as soon as some of its shells fell by mistake among the ranks of the Highlanders."

The French instruct their artillery to fire in such cases obliquely over the infantry, thereby at the same time enfilading the hostile line; and we find the same in par. 346 of the F. A. D. R., cited in No. 40. This refers especially to the situation of the English artillery at Elandslaagte, which could fire from its own position on the south front of the Boer infantry without endangering its own troops.

That the attack was carried out along the entire line simultaneously, the center included, was correct.

Firing during the charge is, according to our regulations, the exception. But many have different views as to that. Among the latter is General von Boguslawski.

43. Inquiry Into the Reappearance of the Boer Guns.

Concerning this matter pars. 359 and 360, F. A. D. R. say: "* * but as soon as the opponent begins the decisive attack the entire artillery must, without waiting for orders, again open fire with all guns on the hostile infantry without regard to the hostile artillery fire. Even single batteries, suddenly appearing at a new point, will be found of especial advantage in this.

"If the attack succeeds in spite of this, then a part of the artillery must prevent the hostile artillery from being brought into the captured position, while the remainder must concentrate its fire on the assaulting infantry of the opponent, in order to, in conjunction with the reserves, drive the enemy from the position. This is one of many battle situations in which a stubborn holding fast until the last moment is necessary, and is full of honor even if the guns are lost."

If in spite of these paragraphs we still have our doubts as to the correctness of the reappearance of the Boer guns, it may be attributed to the fact that we criticise the manner of the Boer warfare along broad lines, and that disapprov-

ingly. (See 44.)

"While one portion of the Boers, by helding up white flags, showed that they wished to surrender (an action which caused the British to sound the 'cease firing'), another Boer detachment of about fifty men made a counter attack. This was at first successful; the guns being temporarily retaken, but the English officers again managed to lead their troops forward, and finally drove back the enemy in a northerly direction. Here he came across the two squadrons which, having approached nearer and nearer to the battlefield during the action, now attacked the fugitives at a gallop and rode them down."

44. Discussion of this Phase of the Battle.

- (a) The Boers can not be blamed for surrendering, as there was nothing to be gained by a continuation of the struggle. The counter attack could not be foreseen. (See, however, No. 45.)
- (b) The signal, "arms at rest," on the part of the English seems to indicate obsolete views concerning the end of a battle.
- (c). The counter attack of fifty men is perceived to be a sign of decision. That it was undertaken at all proves to what extent danger to the guns may increase the resistance of even the infantry. This should not be overlooked. Its temporary success shows how easily victorious troops can be thrown into confusion, and points out the importance of having reserves in close order, even if but weak, during and after the execution of the charge.

(d) The attack of the cavalry deserves approval. It may be assumed that the squadron of the right flank also was utilized in a similar manner. But the retreat of the mounted Boers was a scattering of single riders in a large field. Therefore, in this case the assault-more correctly the capture—was to be preferred to the fighting on foot. In the case of orderly retreating infantry, fighting on foot would not only be less costly, but also more effective, than charging mounted, because then we would not interfere with the pursuing fire of our own infantry, and we could also in that case break off and renew the battle at will. It appears strange that the cavalry, with its attached battery, did not during the battle harass the enemy in the rear, especially his guns and led horses. It is to be assumed that the small advanced detachment (see sketch) on the right flank of the Boers kept it from that, and thereby performed a valuable service.

"The Boer detachment was thoroughly beaten."

45. Consideration of the Boer Manner of Warfare.

General Kock should be charged with aimless maneuvering. In face of the superiority of the English, especially in artillery, which was doubtless well known to him, in face of the formation for attack, leading to his enveloping, the outcome of the battle could not have been in doubt. There was no reason at all for seeking battle at Elandslaagte. The costly containing of General French's detachment on this day did no good to any other body of Boer troops, and the task of cutting off the retreat of the detachment of General Yule could easily have been carried out farther to the north. Had then the detachment of General French followed, it would have risked the danger of being cut off. The Boers' defeat had a disheartening effect on the entire army, and on the vacillating population of Cape Colony.

As, however, General Kock accepted battle, he should have utilized the mobility of his command to its fullest extent. As soon as the opposing flanking detachment had committed itself to the attack, he should have considered his position only as a trap—leaving there a few sharpshooters with

plenty of ammunition—and with the main part of his command, inclusive of guns, should have taken up a new position on the hostile right flank. Could this movement have been executed secretly, it might have led to a successful counter attack; in any case, much time would have been gained, and the Boers would have withdrawn themselves from the envelopment.

"The British buried 60 dead, found 150 wounded, and took 184 prisoners. The Boers give their loss as 62 killed and 104 wounded; 36 per cent. and 54 per cent., including prisoners. The English loss was trifling; it amounted to:

,	Killed.	Wounded.	Total.	Per cent
Officers	5	30	35	23
N. C. O. and men	50	175	225	7.5

The Gordons and the Imperial Light Horse had suffered most, having been crowded together in a small space during the assault.

46. Remarks on the Losses.

To page 37 of the history we will add the following:

The loss of the Imperial Light Horse must have been keenly felt, especially as the horses, whose riders had fallen, had to be led. This fact doubles the losses in the cavalry. Mounted infantry, the horsemanship of which is not required to be of such high standard, can be more easily recruited.

In consequence of their colonial wars (page 25 of the history), the English are inclined to consider even small losses as great misfortunes. Fear of loss is, of course, wrong for a continental army.

The ratio of dead to wounded is as one to three, as is generally the case.

The difference in the amount of losses as given by the English and the Boers may be explained by the fact that the latter had colored servants with them which they did not consider as being participants.

* * *

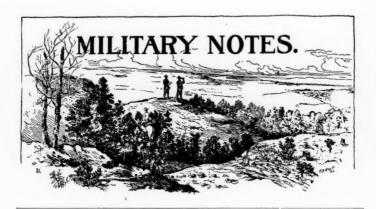
The following comments of the history, as well as the final outcome of the battle, are quoted verbatim, without comment:

"As regards tactics and training, the British force had shown itself quite on a par with its adversary. The Boers were pressed energetically in front and flank, and succumbed to the power of concentric infantry fire at very short range. which was effectively supported by a superior number of guns. On the extreme right wing individual fire had been the rule throughout. The heavy loss of officers is nothing strange for the first day a force is in action: this happens in all wars. But the loss of men was unexpectedly small, notwithstanding the fact that the Boers had used their rifles up to almost their extreme limit of range. The First Battalion of the Devonshires, skillfully led across the bare plain. only lost four officers and twenty nine men, and the employment of the cavalry against the flank and rear of the enemy is worthy of all recognition. In spite of this success it appears not to have been possible to join hands with General Yule at Dundee: he learned, on the day after his success at Talana Hill, that the Boers had been reinforced and were preparing to surround him, and he decided, therefore, to avoid this danger by a rapid retirement to Ladysmith.

"General White had witnessed the action at Elandslaagte. On the way back to his headquarters he received information that strong bodies of the enemy were advancing along the Harrismith-Ladysmith line of railway. As, with his divided force, he did not feel equal to coping with them, he approved of the decision of his second in command, left behind in camp, to recall General French's detachment from Elandslaagte. With his troops united he hoped to be able to resume his original plan of campaign. The mounted troops moved off from the battlefield at Elandslaagte on October 22d, at 3 A. M., and the infantry followed by train at 6 A. M. and later.

"General Yule began his retreat at 9:30 P. M. on the same day; he marched at first in a southeasterly direction, and only reached Ladysmith on the 25th, with his troops com-

pletely exhausted. The Boers had followed the retreating British columns and occupied positions round that place, General White, notwithstanding the two victories of Talana and Elandslaagte, not having been able, owing to his forces being scattered, to prevent the junction of the separate hostile columns as they debouched from the mountains. He could not know that the news of these victories had induced a number of doubtfully inclined persons to abstain from joining the Boers."



OUR REPRESENTATIVES AT SAUMUR.

THE following letters, copies of which have been furnished by permission of President Roosevelt by Captain Frank McCoy, Third Cavalry, A. D. C., will be of interest to our readers:

THE WHITE HOUSE, WASHINGTON, March 23, 1908.

My Dear Colonel Mazel:

On behalf of the American government I wish to thank you heartily for the constant and unfailing courtesy extended by you and those under you to the American officers who have been at the Saumur School. From all who have been there, I have heard not only that they have been treated with every official courtesy, but that they have been received with a personal kindness and friendliness that has deeply touched them. Moreover, without exception the officers feel that they have profited immensely by their attendance at the school, and they are filled with enthusiasm for, and

admiration of, what one of them, in a letter, calls "the splendid horsemanship shown alike by the highest and lowest among the French officers whom" they have met. I have been so much imprest by their uniform testimony to the benefit they have received, and the great courtesy and consideration with which they have been treated, that I desire to send this word of personal thanks.

My cavalry aide, Captain Fitzhugh Lee, is to go to you this summer. He is a grand-nephew of the great Confederate General, Robert E. Lee, and I hope you will like him.

I venture to send you herewith a photograph.

With renewed thanks, believe me,

Sincerely yours,

THEODORE ROOSEVELT.

Monsieur le Colonel Mazel, Commandant l'Ecole d'Application de Cavalerie, Saumur.

(TRANSLATION.)

SCHOOL OF APPLICATION FOR CAVALRY, SAUMUR, July 12, 1908.

Colonel Mazel, Commandant of the School of Application for Cavalry, to Mr. Roosevelt, President of the American Republic:

Mr. President:—You have had the kind consideration of sending to me, along with your photograph, a private letter in which the School for Cavalry at Saumur, which I command, is commended in terms that have gone to the hearts of the corps of officers of the school.

In reply to your communication, I have the honor to extend, in their name and my own, our most respectful thanks.

I am personally very much flattered by the sentiments of esteem that the officers under my command have been able to inspire in those of their comrades of the American army who have been sent here to share their labors.

These feelings of esteem are fully reciprocated and, for myself, I am glad of having this opportunity of informing

you that Captains Henry, Lahm and Short, who have been the representatives at Saumur of your army since I have been in command here, have always set the finest example by their military spirit, their zeal and their professional worth.

Your aide-de-camp, Mr. Lee, who will take the army course of 1908-9, will be especially welcome among us, not only on account of the duties that he has performed under you personally, but also on account of the name which he bears, one that is renowned throughout the entire French cavalry.

Please accept, Mr. President, my renewed thanks and the expression of my most respectful sentiments.

O. MAZEL.

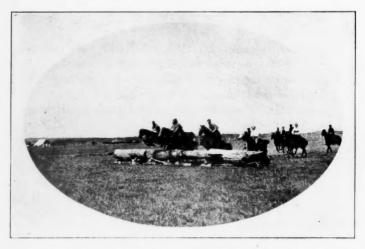
THE FORT RILEY BUNGALOW.

THE accompanying pictures illustrate a phase of outdoor life at Fort Riley that tends to make service at that post attractive.

The Quartermaster Department built a stone bungalow, at the request of the commanding officer, to serve as a nucleus for athletic sports, and to provide a place for the entertainment of visiting teams and players.

The development of athletics for officers has often proved futile, owing to lack of systematic work, rather than lack of facilities. The scattered attempts to play baseball and polo do not result in good team work. Here the sports are concentrated, and a good attendance is always assured.

The bungalow is located about a mile from the post, on the Smoky Hill bottom, across the Kaw River; this distance, instead of proving a drawback, is an advantage, as it furnishes a gathering place for those who tire of seeking exercise within the limits of the garrison sidewalk. In this respect it resembles a small country club. The little house contains a dressing room, kitchen, and a lounging room, where refreshments are served. It is sur-

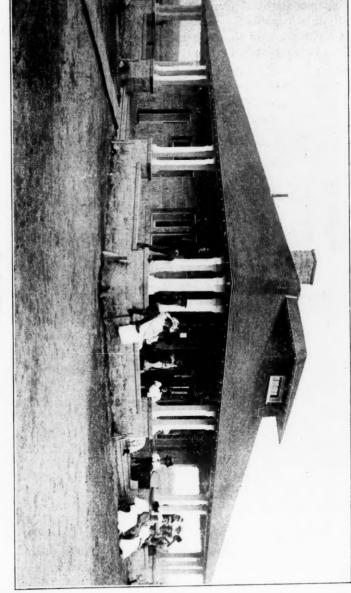


CROSS COUNTRY RACE-LIEUTENANT DEARMAND, SIXTH FIELD ARTILLERY, WINNER.

rounded by the polo field, golf course, tennis courts, baseball grounds, steeple-chase course, and the traps for shooting clay pigeons.



CIGAR AND UMBRELLA RACE-LIEUT. TAULBEE, SECOND CAVALRY, WINNER.



THE BUNGALOW.

The bungalow is available for outdoor entertainments and moonlight suppers, as well as for the regular schedule of athletic games.

The pictures shown here were taken during the "Pay Bill Celebration" last month.



THROWING THE BASEBALL.

The bungalow has proven a success in developing the healthy desire for open air amusements and, in addition, it has helped solve the problem of entertaining guests, distinguished and otherwise.

The photographs were taken by First Class Sergeant C. A. Heckelman, Hospital Corps, and Sergeant F. E. Hughes, Hospital Corps.

W. M. W.

APROPOS OF THE INCREASE IN THE NUMBER OF INFANTRY REGIMENTS.

THERE is no doubt that, to have the infantry bear a proper proportion to the cavalry and light artillery of our army and to allow it to remain at home stations long enough to recuperate from the effects of tropical service, its strength should be increased by about twenty regiments.

It has been recognized as equally true that, to preserve the efficiency of any arm, there must be insured to its officers a reasonable flow of promotion and, in our service, that this flow of promotion be about the same as in the other arms.

A slight study of the army register will show that the cavalry arm is at present suffering, not only from the lack of a reasonable flow of promotion, but also from the discrepancy between this flow and that in the other two arms.

The great mass of the officers of infantry are too young to know from personal knowledge what happened when that arm, after the Civil War, was reduced to twenty-five regiments; but many of the older officers do know what became of the officers who were thus rendered superfluous in that arm, and it is just at the present time, when the cavalry is suffering so seriously from dilatory promotion, that these officers should enlighten their juniors on this subject, and in any scheme for the increase of their own arm endeavor to compensate the cavalry for the check to promotion which its officers suffered through the transfer to that arm of officers from the infantry at the time the latter arm was cut down in 1870.

Let it be remembered that an army is composed of three arms, and that, in its ultimate destiny, battle, success cannot be attained unless each arm is thoroughly efficient, the complement of the others, supplementing properly their action, and constituting a perfect team in the hands of its commander.

The efficiency of the cavalry is threatened by the lack of promotion in that arm and by the inequality between promotion in that arm and in the others.

In any bill for the increase of the infantry, let there be provision for the incorporation into that arm of a certain proportion of all grades of cavalry officers; thus repaying the cavalry for the check to its promotion in 1870, and insuring to its officers promotion more nearly equal to that of officers of the other arms having the same length of service.

J. F. REYNOLDS LANDIS,

Major Sixth Cavalry.

THE NEW BRITISH CAVALRY SABER.

(From the Morning Post, London.)

To the Editor of the Morning Post:

CIR: - The letters which have appeared in your columns on this subject support the theory that the thrust of the sword is more generally effective than its cut; but our military reformers have need to remember that in war theories count for very little, and practice for a great deal. National idiosyncracies should be consulted in the choice of weapons; a Briton, a German, any man of Teutonic stock, will always naturally use a sword for cutting or slashing; a Frenchman, Spaniard, or Italian will equally naturally use it to point and thrust. Englishmen are generally better at singlestick than with the foils, and German students fight their duels with cutting swords. Napoleon was an Italian, and he advocated the point; his cavalry were trained to use the thrust, and at Waterloo the French cuirassiers used the thrust, while the English lifeguardsmen and dragoons used the cut, and invariably overcame their opponents. With our cavalry the cut is ineffectual, because their weapon is a bad one for the purpose, and because it is kept blunt by a steel scabbard. A Highland man with his claymore would cut, not only through clothes, but through chain mail, and a Turk with his scimiter would take off an adversary's head with one sweep.

The answer to the question whether the cut or the thrust is more effective depends on the weapon and the hand that uses it; a claymore in the hand of a Highlander or a scimiter in the hand of a Turk is as effective in a melée as a rapier in the hand of an Italian. All Oriental nations-Turks. Arabs, Afghans and Japanese—use the cut, and to give our native Indian cavalrymen a thrusting sword would be simply to turn good swordsmen into bad ones. The old broadsword or backsword with which the British cavalry was armed in the seventeenth and eighteenth centuries was an excellent weapon, and so was the saber used later by our light dragoons. The cut-and-thrust sword which replaced these weapons was a compromise which sacrificed the chief advantages of the rapier and the saber in the effort to combine them. The British trooper may be armed with a thrusting sword, but in the charge he is most likely to use it as a cutting one.

Yours, etc.,

F. H. TYRRELL,

Lieutenant General.

ROCKY MOUNTAIN ENDURANCE RACE.

(BY MAUCHLINE MUIR, IN "THE WORLD TODAY" FOR AUGUST.)

From The Denver Post.

(The endurance race conducted by *The Denver Post* to determine the best breed of horses in the world, attracted international attention. The race was deemed of considerable moment, and Mauchline Muir, a writer for *The World Today*, was detailed to write of it. In the article reprinted on this page Mr. Muir comments very favorably on the fact that the horses were treated in a very humane manner, and that there was no brutality permitted by *The Denver Post*, which paper promoted the race. He cites this fact in contradistinction of the brutality permitted in the European race from Vienna to Berlin, held some fifteen years ago.—EDITOR.)

A^{T 6 A. M.,} May 30th, twenty five horses shot from the starting line at Evanston, Wyo., to attempt a great endurance race to test the speed, stamina and bottom of the native-bred Western broncho. At 2:30 P. M., six days later,

two ponies came neck and neck across the finish line on Champa Street in Denver, having covered in that time 552 miles across the entire State of Wyoming and down into Colorado. The ponies which divided the honors for first place were "Sam," ridden by F. T. Wykert, of Severance, Colo., and "Teddy," ridden by Charles Workman, of Cody, Wyo. In the interval named, both horses and riders had crossed the Continental Divide, covered an average of 86 14 miles a day, and came in at the finish tired, but in very good condition.

The object of the race was to discover the value of the broncho both to horse breeders and to government officials of the cavalry branch of the army service. To this end the race was thrown open to any horse in the world. Several animals of good blood, notably some crossed with Hambletonian and Morgan strains, were entered, but not one of them came in among the first six who shared the prize money.

Before starting, each horse was thoroughly examined by veterinarians, and a record kept of its weight, age, description, and measurements. This was to furnish later data for comparison. The horses ranged in weight from about 850 pounds to about 1,075. The total weight carried by them was about 185 pounds, including rider, saddle and all equipment. All along the route were established checking stations, where the riders registered upon arrival, and the horses were examined by veterinarians and their condition passed upon before the animals were allowed to continue. Any horse found unfit to travel further with safety was ruled out of the race. As most of the horses were ridden by their owners, the greatest care was taken of them. The result was that the animals which stood the travel arrived in Denver in good condition, which was quite contrary to the facts of the last great endurance race, the one run from Vienna to Berlin, some fifteen years ago. Though the European race was over 200 miles less ground, the two winning horses were practically killed, one falling exhausted at the finish, and the other dying next day in the stable.

The course of the race was along the old Overland Trail, now followed by the Union Pacific Railroad. Evanston is in

the southwestern corner of Wyoming, and from that point the trail swept in a long segment of a circle to Cheyenne, in the southeast corner, and thence south to Denver. Everywhere along the route the greatest interest was taken in the race. The news of the approach of the riders was flashed by wire, and all the ranches and little cow towns furnished an enthusiastic contingent to cheer the contestants on their way. Laramie, Rawlins, Cheyenne, turned out their entire populations, and at least 30,000 people lined up and waited patiently many hours for the finish. Every section of the Rockies from which there came a horse and rider had its local patriotism, and wired to the "favorite son" offers of additional prizes if he should capture first place.

The horse "Teddy," known by the cowboys as "that Cody hawss," took the lead from the start, and opened a wide gap between it and the rest of the racers. For the first day two other horses hung to its heels, one of them, a little thoroughbred stallion named "Archie," ridden by Trew, beating the Cody horse into Green River that night after covering 112 miles in about sixteen hours. The second day's travel took them through Point of Rocks and from there across the heavy sand of Red Desert. It was heavy traveling, and though the little thoroughbred stuck gamely to his work, the great strides of the big broncho, pounding steadily forward hour after hour, proved too much for the stamina of the other. "Archie" fell back beaten and "Teddy" trotted into Wamsutter alone that night, having covered 192 miles in two days with no apparent distress. The rest of the riders that remained in the race were from twenty to fifty miles behind Workman.

The leader reached Rawlins shortly after noon on the third day. He rested here for several hours, and before he had left, Kern of Colorado came in on "Dex." He was followed at intervals by Edwards, a Wyoming rider, and Means and McCelland, both of Colorado, the former riding a splendid blooded horse named "Jay Bird." Workman passed the night at Fort Steele, eighteen miles in front of the others. He had covered only sixty-nine miles the third day. From this time the best of the others began to close in on

"Teddy." He reached Medicine Bow (Owen Wister's town, made famous by "The Virginian") nearly two hours before Kern, who was followed by Means and Edwards. Next morning four leaders, instead of one, started out to set the pace from Medicine Bow, on the last half of the journey. The last of the riders left Rawlins at the same time, a good day's journey behind.

Some of the rear guard were already gaining fast on the leaders, notably Casto and Wykert. The latter especially was riding very strong. At one time sixty miles behind Workman, by long night rides and steady going his "Sam" came into Laramie late the same night that Workman, Means,

Edwards and Kern arrived. Cheyenne was reached late the same afternoon, Wykert arriving first, followed by Workman. Edwards. Means and Kern, in the order named.

There was no sleep that night for the leaders. Denver was only 100 miles away, and Workman was away on the long trail as soon as he and his horse had finished eating. The others were roused from sleep in the stalls with their ponies to hear the news, and at once threw on their saddles and were away in pursuit. They caught him some miles out of Cheyenne, and a fast pace was set that weeded out, first, Kern on "Dex" then Edwards on "Sorrel Clipper," and lastly Means on his "Jay Bird." At Greeley, "Teddy" and "Sam" were going alone. At Fort Lupton they were still together; at Brighton there was not a rod to choose between them. Wykert's "Sam" was in much the better condition, but "Teddy" hung on and would not fall back.

The conditions remained the same till they reached the outskirts of Denver. It was plain that neither could win from the other without such a gruelling finish as might kill one or the other of the tired horses. It was therefore agreed to divide between Workman and Wykert first and second prizes. The horses, escorted by hundreds of riders and automobiles, rode through the great crowd and across the line in front of the office of *The Denver Post* side by side. The condition prize of \$300 was awarded by a unanimous decision of the judges to Wykert's "Sam." Edwards on "Sorrel Clipper" took third prize, Kern on "Dex" fourth, Casto on "Blue Bell"

fifth, and David Lee, riding "Cannonball," sixth. All of the ponies were bronchos, or had a large strain of broncho blood in them. They had covered 552 miles in less than a week, and came in still strong and fit. The finish of this extraordinary race seems to justify the contention that for a combination of toughness, speed, and stamina the native Western pony can hold its own against any horse in the world.

THE ARMY SERVICE SCHOOLS.

WHILE the cavalry branch of the service has reason to be proud of the records of their representatives at the Army Service Schools, and while it is hoped that this fine record may be maintained, it is feared that our cavalry officers generally are not taking advantage of the facilities offered by these schools as are officers of the other branches of the service.

The inference that this is not being done by our cavalry officers is drawn from the fact that but a small percentage of them are on the mailing list of the secretary of the schools, and that therefore they are not availing themselves of this most excellent opportunity to procure a great deal of valuable professional literature at little or no cost.

This mailing list has grown rapidly within the last year, now includes over six hundred officers, and is growing at the rate of five or six per day; but, as stated above, there are but a comparatively few cavalry officers on it.

To every officer on this list are sent copies of all problems, with their approved solutions, lectures, notes, maps, pamphlets on military subjects, etc., emanating from the schools. In nearly all cases this matter is sent free of cost to the officer concerned, and when a charge is made, as in the case of certain books, maps, etc., it is merely nominal, and only sufficient to cover the bare cost of material and labor.

That there is much valuable information, theoretical and practical, being thus disseminated to the army, and that the

Army Service Schools are thereby doing a great, good work cannot be doubted.

It therefore behooves our cavalry officers to get busy and not neglect this opportunity of picking up professional knowledge, even if they never hope or expect to attend the Service Schools at Fort Leavenworth.

E. B. F.



A^T a late meeting of the Executive Council of the Cavalry Association, it was determined to abandon the giving of prizes for the best solutions for problems, after the prizes for Problems Nos. 8 and 9 have been awarded.

This action was taken because of the small number that have entered these competitions, particularly as regards the later ones. During the last year there has never been more than three competitors that have sent in solutions for any one problem.

The Council has reason to believe, from the correspondence had regarding these prize problems, that this falling off in the number of competitors is not due to a lack of interest in them, but rather to a hesitancy in competing against those who had more experience in this line of study.

It is possible that, in the future, when more of our cavalry officers have had special training in map meneuvers, it may be well to try again the experiment, for it was an experiment.

The many suggestions, complaints, etc., regarding these problems show that much interest has been taken in them, and not a few have reported, verbally and by letter, that they study each problem, make their own solutions or draw their conclusions, and then wait for the published prize solution with much interest.

The principal complaint received has been as to the long time elapsing between the publication of a problem and the appearance of the corresponding solution, which has a tendency to detract from the general interest in them. This great length of time was given in order to permit our comrades stationed in the extreme limits of the Philippines an opportunity to compete, although the disadvantage of so doing was foreseen.

The Council has therefore determined to return to the former plan of publishing a problem in each number of the Journal and the corresponding approved solution in the succeeding number. This will give all who are interested in these studies the opportunity to make their solutions and to compare them with the solution adopted as the most correct one, without waiting so long that their interest has been lost in them.

Also, it is hoped that the publication of these problems will provoke discussions in our colums as well as in the garrison schools and elsewhere that will lead to profitable results.

For a year or more, it has been hoped that we would have another map, covering a larger extent of territory and more varied ground, and thereby permitting a greater variety of problems, but it has not yet appeared, and it will therefore be necessary, for some time at least, to use the same Fort Leavenworth four-inch map.

PRIZE PROBLEM NO. 7.

The Editor Cavalry Journal.

DEAR SIR:—The committee selected to examine the solutions of Prize Problem No. 7, has the honor to report that it finds the solution signed "Atchison Cross" the better of the two solutions submitted, and recommends that the prize be awarded the author. However, the committee is of the opinion that it would have been better to mount the prisoners behind the troopers and make a dash for safety by way of Sheridan's Drive with the entire command fighting only in case of necessity. In any case the detachments sent to Engineer Hill and 17 might have been much smaller and still have accomplished their missions, since their weakness would have been concealed by darkness.

MATTHEW E. HANNA,

Captain Third Cavalry.

A. L. CONGER,

Captain Twenty-ninth Infantry.

In accordance with the above report, the prize for the best solution of Prize Problem No. 7 has been awarded to Captain Howard R. Hickok, Fifteenth Cayalry.

PRIZE PROBLEM NO. 7—SOLUTION BY "ATCHISON CROSS"

I. COLONEL A'S DISPOSITIONS ON THE MARCH TO THE

The following instructions were given and enforced: Every man will wear a white band on the left upper arm: in deployments guide on the right element; keep guiet, and no talking allowed except such as may be necessary, and that only in a low tone; adjust all equipments so that there will be no rattle; keep well closed up in column. officers' watches were regulated by that of Colonel A. A guide was assigned to each squadron and Colonel A had one himself. The command marched in column of fours and kept well closed up. An advance guard of one troop, which had out a point of a squad, preceded the main body at 300 vards and a rear guard of one troop followed at the same distance. Connecting files preceded and followed the main body. The following small patrols were detached: At 47. one to watch for any Red force that might come from Kickapoo: at 17, one to Prison Cemetery, and one via Sheridan's Drive and a wood road to the woods near the commissary storehouse: from G. one to C. one to Engineer Hill and one to Merritt Hill; and from the Penitentiary, one each to Grant Hill, to 62, and to Metropolitan Avenue at road fork southeast of 70. Arriving at hill 800 just northwest of the penitentiary, the First and Second Squadrons dismounted to fight on foot. Troop "A" made a slight detour to the north and approached the east gate and face from the east, except one squad which was deployed on the north face. Troop "B" went to the south face and gate. Troops "C" and "D" approached the west face and gate, Troop "C" remaining on guard outside after Troop "D" had blown in the gate and entered. The Second Squadron was held as a dismounted

reserve and the Third Squadron remained mounted for all contingencies, and also had charge of the ten Red prisoners captured at Frenchmans.

2 HIS ESTIMATE OF THE SITUATION.

Colonel A's mission, the release of the Blue prisoners confined in the U. S. Penitentiary, resolves itself into two parts; first, the capture of the penitentiary and the delivery of the prisoners, and second, their safe conduct back to the east bank of the Missouri River. The first part Colonel A has accomplished without difficulty. He must now meet alarmed troops of the enemy. His regiment of itself can easily escape, but the released prisoners are on foot and without arms, except such as Colonel A has incidentally captured. These dismounted men add neither offensive nor defensive power to the movement; to the contrary, they detract from mobility, and are almost as defenseless as a convoy of wagons, and must be protected accordingly. Colonel A must, therefore, hold the enemy's attention long enough to allow the released prisoners to reach a point of safety.

Colonel A finds himself almost surrounded by the enemy. Six companies of infantry are quartered in Kickapoo. Of these, about a battalion is now at 17, on the route by which Colonel A advanced. A larger force of infantry, artillery and special troops is at Fort Leavenworth. An infantry brigade is quartered in Leavenworth. Fortunately for Colonel A, the nearest hostile cavalry is at Atchison, about eighteen miles away, and he can rest easy that no mobile troops will oppose him. As all telephone and telegraph wires have been cut, and as the garrisons of the Fort and of the city are just now being alarmed, the alarm was probably communicated by the two sentinels that escaped capture at Frenchmans, though it may have been given by some means that escaped Colonel A's observation. The presence at 17 of the force now there would indicate that the information had reached Kickapoo by some means sooner than it did the forces in the Fort and city. Halting at 17 and sending out patrols would indicate uncertainty as to the direction taken by Colonel A, the snow having obliterated all tracks. The Red commanders may surmise the object of Colonel A's movement, or they may be still undecided as to that point and as to his present location. In any event, the Red troops are now alarmed. Those at the Fort and in the city will in a short time be out under arms, and will begin active measures to determine something of Colonel A's force and to operate against him. Darkness hinders their reconnaissance, and broken communications will prevent concert of action between the various columns.

The falling snow has favored Colonel A's movements by covering his tracks, at least so far as concerns the Kickapoo force. It is now 5 A. M., and daylight will not come for an hour and a half or more. In returning to Weston, to take the roads through Fort Leavenworth, or to try to force the bridge across the river there, is out of the question. The route by which Colonel A came is now blocked by the battalion at 17. There are two other routes open. One of these is the F-15 road, and thence by open fields to the Missouri River. The other is the Sheridan's Drive and wood roads to North Hill. These routes pass between the enemy's forces now at 17 and in Fort Leavenworth. They are not now held in force, though they may be held by small observation posts. The force at 17 is in a location from which it may move and materially interfere with the march of the released prisoners. The Sheridan's Drive route is farther from it, is on higher ground, affords better concealment on the march, and is the preferable route. If the released prisoners can pass north of the 11-17 road while the enemy is still at 17 and in Fort Leavenworth, the command may be considered safe.

Such arms as were captured at Frenchmans and at the penitentiary can be issued to the released prisoners as far as they will go. The dismounted men will, of course, need additional protection of mounted men. In order to insure that the enemy will not advance upon Sheridan's Drive, he must be held near his present locations. The best way to hold the enemy is by attacking him. The smaller the force that can be used for this purpose and be effective, the easier will

its own retreat be accomplished. Two troops attacking 17 and five troops attacking Fort Leavenworth and Leavenworth should be sufficient. The attacks should be delivered in such a manner as to draw the enemy away from Sheridan's Drive, and to mislead him as to the size and composition of the forces attacking him. The darkness favors both conditions. In Fort Leavenworth all is confusion. The troops there are now forming under arms. The lights have suddenly gone out, the power being supplied from the city. This, taken in consideration with the direction in which the Blues were moving when discovered, would indicate to the Red commander in the Fort that the Blues may be interposed between the city and the Fort. An attack on the Fort from the direction of the city will favor Colonel A's plans. At the same time, the troops advancing from the city must be held back. An attack on 17 from the southwest will similarly draw off the battalion there.

From the penitentiary to 11 is four miles. Considering the snow and the effects that their long imprisonment may have had on some of the men, it will take the dismounted men possibly as long as an hour and a half to reach 11. That will be about 6:30 A. M., and the first light of dawn will appear not long thereafter. Considering the circumstances, the movement must be hastened. With seven troops disposed as above outlined, five will be available for duty nearer the convoy. One troop should be enough to guide the convoy, keep the column together, and pick up stragglers. The other four troops should go ahead of the convoy, brushing aside or capturing any posts on the route and taking a position in readiness at 15 to hold off the battalion now at 17, later following the column.

If the troops ordered to act against the forces at 17, the Fort, and the city continue their operations until 6:30 A. M., or daylight, they should have accomplished their mission, withdraw easily, and join the remainder of the regiment. However, in order to obtain success, Colonel A must act quickly, starting off his convoy and the various detachments at once. Considering the start his command will have and the enemy's lack of information and concert of action, Colonel

A should succeed in bringing off his regiment and convoy safely.

3. HIS DECISION.

Colonel A therefore decides to make disposition as follows:

Five troops to attack Fort Leavenworth from the direction of Engineer Hill and Grant Avenue and to delay any forces advancing from the city.

Two troops to attack the battalion reported as being at 17.

One squadron and the machine gun platoon to proceed quickly via Sheridan's Drive to 15 and take up a position in readiness against an advance by the battalion at 17, later following the convoy.

One troop to escort the convoy by Atchison Cross, E, Sheridan's Drive, North Hill, thence to Weston.

The troops designated for the attacks to delay the enemy until 6:30 A. M., and then to withdraw.

These dispositions scatter Colonel A's command a good deal. On account of the number of the separate detachments of the enemy whose attention must be held, this dispersion is unavoidable, and, due to the mobility of Colonel A's detachments and to the fact that they are only required to mislead and delay the enemy, the dispersion is justifiable.

Colonel A has caused the released prisoners to be divided into convenient sections of about 100 men each, to facilitate easy handling and marching. To one of these sections the arms captured at Frenchmans, and at the penitentiary are quickly issued and the Red prisoners captured at the same places are turned over to this section to act as guards. Lieutenant X was placed in charge of this section.

4. HIS ORDERS.

Colonel A then issues his orders verbally to his assembled field officers and troop commanders. These orders, if reduced to writing, would take the following form:

HEADQUARTERS SEVENTH BLUE CAVALRY, U. S. PEN., NEAR FORT LEAVENWORTH, KANS.

FIELD ORDERS | No. 2.

25 Dec., 07, 5:05 A. M.

- I. Call to arms has just sounded in Leavenworth and Fort Leavenworth. A battalion of Red infantry from Kickapoo has halted at 17.
 - 2. Our return to Weston will begin at once.
- 3. (a) The First Squadron and Troop 'E," Lieutenant Colonel B, commanding, will proceed quickly and attack Fort Leavenworth between Engineer Hill and Grant Avenue, and will oppose any troops advancing from Leavenworth. The enemy will be kept engaged until 6:30 A. M., at which time Lieutenant Colonel B will withdraw his command and join the regiment.
- (b) Troops "F" and "G," Major C commanding, will proceed rapidly and attack the battalion now at 17 from a southwesterly direction. This engagement will be continued until 6:30 A. M., at which time Major C will withdraw his command and rejoin our column.
- (c) The Third Squadron and machine gun platoon, Major D c mmanding, will proceed at once via Sheridan's Drive to 15 and take up a position in readiness against an advance by the force now at 17. Orders for the withdrawal of this squadron will be given later.

The enemy must be kept away from Sheridan's Drive until the safety of the convoy is assured.

- (d) Troop "H," Captain C commanding, will escort the released prisoners via Atchison Cross, E, Sheridan's Drive, wood roads to North Hill, thence to Weston.
- 4. I will be with the convoy until π is reached, and thereafter with the Third Squadron.

A, Colonel, Commanding.

Verbally to assembled field officers and troop commanders. Copy later to Division Commander,



THE U. S. CAVALRY ASSOCIATION.

The next annual meeting of the Cavalry Association will be held in Grant Hall at Fort Leavenworth, on January 18, 1909, as provided by our Constitution. It is hoped that all members, regular and associate, will sign and mail their proxies without delay, and thereby save your Secretary the trouble experienced last year in securing enough proxies to constitute a quorum and permit the Association to transact its business.

While a few, a very few, did send in their proxies promptly last year, the majority did not, and it was only by an extended correspondence with the larger garrisons that a sufficient number were procured before the meeting. A number came straggling in after the meeting had been held.

It is true that our officers are busy men, and all possibly have other matters of importance on their hands, but this does not apply to our members on the retired list, and, in many cases, to our associate members. However, it will take but a moment to sign and mail your proxies, and, in case a member is on duty with a regiment, the trouble of mailing can be avoided by handing the proxy to the regimental representative of the Association.

The Executive Council of the Association has lost two of its members, Major Boughton and Captain Steele, by reason of change of station, the former having been ordered on duty at the War College, and the latter to join his regiment in the Philippines. They have been active, enthusiastic workers on the Council, and your editor will certainly miss their assistance.

Captains Saxton and Eltinge have been elected as their successors, and it is believed that they will follow in the footsteps of their predecessors in taking an active interest in the affairs of the Association and its JOURNAL.

By the time this number of the JOURNAL reaches them, the regular members of the Association will have received copies of the proposed amendments to the Constitution, and it is to be hoped that they will take prompt action on the same, and return them to the Secretary at once. Regular members only have a right to vote on amendments to the Constitution of the Association.

There are two principal changes to the Constitution that have been regularly proposed, and some minor changes that follow from these two. These are, first, to reduce the number required to constitute a quorum at a regular or special meeting, and, second, to authorize the Executive Council to publish the JOURNAL more frequently. bi-monthly or even monthly, whenever, in their judgment, the finances of the Association and the interest manifested will warrant the change.

The other proposed changes are, as stated, minor ones, and, with a few exceptions flow from the above mentioned two. Among them are the following: To constitute another class of members, to be composed of the non-commissioned officers of cavalry; to constitute a sub-executive council, to consist of one member from each regiment of cavalry, whose duty it shall be to look after the interests of the Association in their respective regiments; and to give a longer time between giving notice of any proposed meeting or action to be taken by the Association and the time of such meeting or action; this in order to give our members stationed abroad ample time in which to send in their votes or opinions.

Notwithstanding the fact that a quasi Chief of Cavalry has been selected and appointed, your Executive Committee has considered it wise to go on with the work of securing signatures to the petition to the President on this subject. This because it is believed that a detailed Chief of Cavalry will not carry the influence that will one having a permanent ap-

pointment and having commensurate rank. It is thought best to attempt to secure legislation on the subject, so as not only to make the office a permanent one, but to give the one appointed rank equal to that of the Chief of Artillery, and to outline and specify his duties and functions.

THE GREATEST CONFEDERATE COMMANDER.

A pamphlet bearing the above title has been published recently, and which is of great interest to the students of the history of the Civil War. It is made up of the answers received to a letter sent by Senator Culberson, of Texas, in the fall of 1907, to forty-three surviving general officers of the Confederacy, asking them to "give me your opinion as to who is entitled to rank as the greatest commander developed on the Southern side in that war."

As was to be expected, a large majority expressed themselves as being unqualifiedly of the opinion that General R. E. Lee was the greatest commander developed in the Civil War. Two gave that rank to General Joseph E. Johnston, two to "Stonewall" Jackson, one to J. E. B. Stuart, and two were undecided. Several stated that, had he lived, General Albert Sidney Johnston might have rivaled Lee as a great commander.

In many cases the reasons for arriving at their conclusion are given, and several give their second and third choice as the great commanders on the Southern side, while many content themselves with simply casting their vote.

Some make comparisons between General Lee and his opposing generals, as does General E. P. Alexander in the following quotation: "Some Confederates may put forward Jackson. But Jackson had an ill-regulated mind. He once favored raising the black flag and taking no prisoners; also during the seven days he shirked all fights possible. (See my Memoirs.) His head was not a level head, and his actions showed it. There is no other Confederate to dispute Lee's title. But Grant will perhaps be claimed by Federal admirers, and, I think, with more justice than the Confeder-

ates could claim the title for Jackson. For Grant they could claim the 'turning of Vicksburg' and its capture in '63, and the 'crossing of the James' in '64 (see my Memoirs), both notable problems in strategy."

Another says: "General R. E. Lee was the grand salient figure of the war on either side, and General Sherman the greatest on the Northern side; and if all our generals had been Napoleons the result would have been the same."

It would be interesting to have compiled the opinions of the surviving generals on the Northern side as to who was, according to their views, the greatest commander on their side during that war. It is believed that no such almost entire unanimity of opinion would result, as was the case among the Southern generals.

THE MACHINE GUN PLATOON.

The article by Colonel Parker that appeared in the July number of the CAVALRY JOURNAL, has brought forth two very interesting replies, which appear in this number. While Colonel Parker's article and the two replies relate principally to the relative efficiency of a machine gun platoon, as organized in our service, and a platoon of cavalry, yet there is room for discussion of the whole subject of machine guns, their use, organization, means of transportation, etc.

That this has been considered more seriously in foreign armies than in our own is evidenced by the fact of the large increase in the number of these guns in every army of Europe and in Japan. as well as the vast amount of literature on this subject that has appeared in the foreign service journals. In none of these journals is there a suggestion or hint that they should be dispensed with as an adjunct to a cavalry command, but, on the contrary, every writer advocates their use and gives examples where they would be considered indispensable.

The following extracts are taken from various foreign journals, principally from reprints in the *Journal of the Royal United Service Institution*, that have recently appeared:

"The Militar-Wochenblätt has published the following information with regard to opinions which are current in the Japanese army as to the employment of machine guns. Their employment was, it is known, to have been so profitable that it is of interest to know the Japanese point of view in this regard, where their experience was undeniable, more especially in the battles of Sandepu and Mukden.

"Moral Effect.—At less than 1,500 meters the moral effect of the machine gun is superior to that of artillery; whilst the length of the time the shell takes between the flash of its discharge and its impact gives time for the men fired at to lie down or get under cover. The grazing and uninterrupted fire of the machine gun does not give time for this.

"Ballistic Effects.—The action of a machine gun may be compared to that of a company of infantry; but its effect is, in reality, superior, for the immobility of the weapon whilst firing ensures results similar to that of picked shots. If the machine gun is provided with a shield, the gunners, feeling safer, will be cooler, and the consequent result even better. Up to 1,000 meters an efficacious fire may be reckoned on. Beyond that range fire may still usefully be maintained on large units or on moving artillery. Cases occurred when fire at 2,000 meters was successfully employed against deep columns.

"Obligatory Suspension of Firing.— The bursting of a gun at its fifth shot during the battle of Sandepu may be cited as an example (irregular expansion resulting from the heating caused by firing). There were also frequent cases of extractors breaking. One should expect the weapon to jam about every 300 shots. Broken extractors are inevitable. The jammings are generally due either to insufficient oiling or to dust: but frequently to the awkwardness of the gunner. Owing to these constant suspensions of fire, machine guns should not, as a rule, be engaged singly, and the two machine guns of the same section should be kept together.

"Gun Carriages and Mode of Transport.—The machine gun carried on a wagon loses a part of its mobility on the battlefield. It cannot follow the infantry, and consequently escapes from the control of the commander. The noise of

carriage wheels, especially at night, betrays its presence. It is, therefore, necessary that machine guns attached to infantry should be carried by pack animals. The tripod carriage is superior to the sledge carriage. The machine gun must be carried by hand, for actual work, by making use of the ground.

"Chance Encounters.—In such case the advance guard ordinarily endeavors to occupy several advantageous positions to give the main body the necessary time and space for its deployment. This is the moment when the mobility and fire power of machine guns makes them most useful.

"After Carrying a Position and in the Pursuit.— As soon as a position has been carried, the assailant should take advantage of the mobility of the machine guns to bring them up to the position taken, to coöperate in the fire of the pursuit, and to guard against counter attacks. The infantry which has delivered the assault is generally too weak for this, and artillery requires time to make its changes of position. On the other hand, the machine guns which have taken part in the decisive action are within effective range, and are thus clearly indicated as the most suitable agents for ensuring the possession of the point carried.

Defensive Action.

"The following are the objects to be sought in the employment of machine guns in the defensive:

"I. Powerful action against the position from which the enemy will emerge for the attack.

"2. Defense of sectors, where it is desirable to maintain a strictly defensive attitude, and to employ a weak effective, so as to be able to have a large body of men available to assume the offensive.

"3. Protection of weak or very important points, where, in consequence of the dearth of space, it is not possible to employ infantry.

"4. For operation against an enemy in places where he is forced to change his formation to a narrow front.

"5. Sweep dead angles in front of the line of defense.

"6. Sweep intervals between two points dappui or to flank a point dappui.

"It is artillery, and more especially shrapnel, that machine guns have most to fear. But, even if cover has been prepared for them, they run the risk of being reduced to silence, and it is prudent to construct beforehand emplacements for changing to. It will often be the most useful duty of artillery to reduce machine guns to silence.

"Machine Gun Drill Regulations.—The Ruskii Invalid gives the following information regarding the Drill Regulations for Machine Gun Detachments, which have been issued to

the Japanese infantry and cavalry:

"Infantry and cavalry have the same type of machine gun, viz., the Hotchkiss. The machine gun used during the later war had shields, which were too heavy and cumbersome, especially in offensive action. The shields have been given up, and the guns must obtain cover by means of the ground.

"The cavalry machine gun detachment consists of eight guns, divided into two sections. Each cavalry brigade has one of these detachments, which may be easily distributed between the two regiments of the brigade. All the *personnel* is mounted. In addition to the seven gunners per gun, as in the infantry, there is a mounted leader to every pack animal, and a leader for the horses of the gunners of each gun. To every machine gun there are four mules, carrying ammunition (2,400 cartridges per animal).

"The machine gun may, for a short time, give superior effects to those of the rifle. It would, however, be a mistake to employ them in a fight lasting for a long time. Fire should not be opened on lines of skirmishers, nor on hostile machine guns, unless one knows the exact emplacement of the latter. Night firing may give good results if aim has been laid during the day, or if the objective is revealed by searchlight. Machine guns should not endeavor to replace artillery, or to enter on a long range engagement with that arm. Should, however, the ground permit of their flank action against artillery, good results may be anticipated. As a rule, the entire detachment is engaged at the same time."

CAVALRY MACHINE GUN DETACHMENTS IN AUSTRIAN ARMY.

"1. Organization of Detachment.—Personnel necessary for serving a machine gun: 9 mounted men (1 sergeant in charge of gun, 2 gunners, 2 ammunition carriers, 4 men to lead horses), 4 pack horses (1 for the gun and 3 for ammunition).

"Cadre of a Section of Two Guns: I mounted subaltern officer, 6 mounted men (I sergeant major for the 1st and I sergeant-major for the 2nd section), 2 connecting agents, I armorer, I range-finder, I unmounted orderly; or per section: I officer and 23 mounted men, I unmounted man, and 32 horses.

"Cadre of a 4-Gun Detachment: I captain, 2 under officers (I for ammunition and I for pay), I trumpeter, I sergeant, I saddler, I orderly unmounted. The detachment has in addition: 2 6-horsed ammunition wagons and 2 led spare horses. Its total effective is therefore 3 officers, 62 men (5 unmounted), 84 horses (54 saddle, 16 pack, 12 draught, 2 spare), and 2 ammunition wagons.

"Total Ammunition Supply: 15,000 rounds per gun (5,000 on the horses and 10,000 on the ammunition wagons).

"Conduct and Employment of Machine Guns.—'The rôle of cavalry machine guns is to increase the fire-power of the cavalry, to support it everywhere, and to assist it in carrying out its many various missions, both in mounted and dismounted action. The detachments must therefore be instructed in, and imbued with the cavalry spirit.' Machine guns should participate in the decisive action; in the event of success to pursue the enemy with a hot fire, and in case of attack to cover the rally or the retreat.

"On account of the rapidity of the cavalry fight, the entry into line of machine guns in sufficient time is frequently accompanied by very great difficulties. 'At the same time, a commander, animated by the true dashing cavalry spirit, which judges the situation and the ground at a glance, will frequently be able to use his machine guns rapidly and boldly, even when he may have received no orders to that effect.'"

THE BRITISH CAVALRY JOURNAL.

While not intending to form a mutual admiration society between ourselves and the editors of the *British Cavalry Journal*, yet we cannot refrain from acknowledging their kind words regarding our JOURNAL that appears in their July number, and also in again calling attention to the many good things, live cavalry articles, to be found therein.

Their journal is always well printed in clear, large type, on first-class paper, and in a style as to binding and paper that we can not hope to equal, even if we could afford to do

SO.

The first article in the July number is a precis of the new Cavalry Drill Regulations of the Japanese army, and from which it is seen that this progressive, up-to-date nation, as regards things military, can give us some valuable pointers regarding cavalry, although it is universally agreed that their cavalry was, and presumably is still, poorly mounted, and was not well handled during the Russo-Japanese War.

The simplicity of their drill is to be admired, and they are apparently not burdened with the numerous and useless formations that we have in our squadron and regimental drill, the line, squadron column and column of route being the only squadron formation, and they have but six formations in regimental drill, and similarly for the brigade formations. The total time spent by the writer on the drill ground in executing absurdly useless movements that we have in our drill, squadron and regimental, would foot up to many months, if not years, that was lost to all that participated in them.

The Japanese lay great stress on fire discipline and on mounted action. Regarding the latter, they say: "The weapons of cavalry are the sword when mounted and the rifle on foot. As a general rule, cavalry will fight mounted, but when there is little hope of success by mounted action alone, the rifle will be used to supplement it and assist in attaining its aim." "The cavalryman's first weapon is his horse; he should cherish it before his own body, and thus in an emergency he can rely upon it without fear of failure." "The

independent duties he is often called upon to perform demand, in the cavalry soldier, an intelligence and a selfreliance superior to that of any other arm."

The other leading articles in this number are: "Famous Cavalry Leaders;" "The French Cavalry School;" "Irregular Troops in the Field;" "Night Operations;" "The Kurdish Militia Cavalry" and "The French Cavalry in Morocco."

RIFLE 715 CARBINE.

The idea has been advanced by some of our cavalry officers that a great mistake was made in equipping our cavalry with the rifle, and that we should return to the use of the carbine. They argue that no satisfactory scheme has been devised for carrying the rifle, and none is likely to be adopted that will do away with the cumbersomeness of this arm; that the horse is now overloaded, and every extra ounce of weight is detrimental to efficient field service, and that the small gain in accuracy of fire, which is at the longer ranges only, is more than offset by the extra weight and discomfort to horse and rider in carrying this arm.

The following extracts from the Militar Wochenblatt on the subject of the "Cavalry Dismounted Action" bear upon this question:

"Whether it will be possible, after arming our men with a weapon equal to the infantry rifle, to make them just as good cavalry soldiers (not marksmen, for there is already scarcely any difference) must be doubted. It is represented that it is for this very reason that we keep our men for three years; the writer feels sure that every expert will agree with him that it is much more difficult to make a good rider in two years than to train a good infantry soldier in the same time. With this, however, our work is not nearly finished, for besides instruction in riding and attention to matters of detail, which are included in our training just the same as they are in that of the infantry, we have to instruct our men to make the most efficient use of the saber or lance.

"A cavalryman will certainly never regard his horse as a mere means of transport, for in this case he would turn himself into a mounted infantryman, and after the bitter experience the British had in the Boer War, no sensible man still gives a thought to mounted infantry, and therefore the first principle with our splendid arm must and always will be 'The cavalry must in the first instance be able to ride.' This cannot be laid stress on too frequently.

"It certainly sounds very well when it is said that we ought to be able to fight just as well on foot as when mounted, but the way to ensure this has not yet been discovered and is not likely to be."

This question is a serious one for our cavalry, and it would be well for some of our writers to take it up.

HORSEMANSHIP.

The following extracts are taken from articles on this subject appearing in the service journals indicated:

"Horsemanship has received special attention lately in the American army, but it is questionable whether the test to which President Roosevelt subjected his officers produced any practical results in the end. So much publicity was given to the whole business, and so much general attention was drawn to it, that it evoked a good deal of ridicule and good-humored banter from the press, and it has not yet leaked out that the results of the tests led to any material improvements being made in the American methods of instruction in military equitation. Yet the Americans are not without their lessons of the value of effective cavalry in warfare, for it was the absence of Confederate cavalry and the presence of Union cavalry under Buford which made it possible for Reynolds' infantry to seize and occupy that magnificent defensive position which insured victory to the Union arms at Gettysburg, and it was such cavalry which, under Sheridan, culminated in the victory at Appomattox,"—United Service Gazette.

"He grew into his seat;
And to such wond'rous doing brought his horse,
As he had been incorps'd and demy-natur'd
With the brave beast."

- Hamlet, Act IV. Scene 7.

"Many authorities have written on the subject of seats, but few horsemen of the present day could reply if asked the practical reasons which governed the adoption of the various styles of riding from the times of the ancients down to our day. Xenophon advocated a straight legged seat; the knights of old, and later the cavaliers, rode perched on their forks, while the American cowboy does so to this day, and up to seven years ago the British soldier almost stood in his stirrups.

"A firm and well balanced seat is of the utmost importance, and the want of it will never be made up for by any other excellencies of horsemanship.

"Adams, a well known writer of the beginning of the nineteenth century, laid down that there should be three different seats on horseback, in compliance with the needs of all classes of riding; namely, the Haute Ecole seat, with the leg practically straight; the military, with the knee slightly bent, and the hunting seat, with the knee rather higher. If he had lived in the present day he would have added a fourth, the monkey or racing seat, which came to us from America.

"It is a mistake to suppose that the bent knee came in with the stirrup; stirrups were not invented till the fifth century, and were not common in the twelfth, yet according to Berenger, the ancient Eastern nations always rode with the leg bent.

"Xenophon, who was born about 100 years later, seems to be among the first writers on equitation who advocated that the horseman should sit on his fork. Over 2,000 years ago he wrote: 'Whether he uses a cloth,* or rides upon the bare back, we should not have him sit as one who drives a chariot, but as if he were standing erect with his legs somewhat astride, for thus his thighs will cling closer to the

[&]quot;*The Greeks used 'clothes' or 'housings,' and not saddles."

horse, and being upright, he will be better able to wield his lance and shield with more force.'

"The medieval knights all used this seat in the lists, for not only did it enable them to put more weight into the thrust, but they were less liable to overbalance backwards after the collision than if their knees had been bent and used as the pivot. Indeed, their high peaked saddles admitted of no other posture.

"The cowboy retains this seat, as it is well suited to his horse and to his work. He has to cross no fences, trotting is unknown to him, and as he pivots on his fork, he can bend and turn at will to sling his lasso. The balance of the body must be more perfect in this position than in the hunting seat, and the rider's weight is nearer to the withers—a most important thing.

"Though Haute Ecole training never seems to have been generally popular in England after hunting commenced over enclosed countries, and is practically unknown in the present day, the majority of writers on the subject of equitation up to about 1850, agreed that the straight legged seat was the best, and the only one to be recommended. It is, therefore, not surprising that up to the year 1900 it was the order of the day in the British army.

"The best position for the rider is that which is most agreeable to himself and his horse. The loosely named hunting seat is certainly the one for all round work; what little discomfort the horse suffers from having to carry the weight further back is amply compensated for by the discomfort and fatigue he escapes when ridden over a rough country, or with his rider bumping to the trot along a hard road.

"The reader will rightly ask why, if the long stirrup is still suited to the cow-puncher, it is not adopted by the polo player? The answer is, that it would do well enough if polo were played in the cowboy's short-seated, high peaked saddle.

"To recapitulate: Fighting on horseback brought in the straight legged seat, and hunting has driven it out. Mobility, i. e., getting onto the battlefield, is more important than greater efficiency for possible shock action on arrival.

"It has been said that about four fifths of the art of horsemanship depends on attaining a just seat, and one fifth on possessing a pair of light hands.

"The writer has not, in his humble opinion, come across a paragraph on the subject of hands of more excellence than the following, written by Lord Pembroke, in 1761:

"'Delicacy in the use of the hands, as well as in the use of the legs, may be given by the teacher to a certain degree: but 'tis nature alone that can bestow that great sensibility, without which neither one nor the other can be formed to any great perfection. A hand should be firm, but delicate: a horse's mouth should never be surprised by any sudden transition of it, either from slack to tight, or from tight to slack. Everything in horsemanship should be effected by degrees, and with delicacy, but at the same time with spirit and resolution. The hand which, by giving and taking properly, gains its point with the least force, is the best: and the horse's mouth, under this same hand's directions, will also consequently be the best, supposing equal advantages in both from nature. This principle of gentleness should be observed on all occasions, in every branch of Hard, bad mouths may appear soft and horsemanship. good to an insensible hand; so that it is impossible to form any judgment of a horse's mouth by what anybody tells you of it, unless you know the degree of sensibility and science that a person is possessed of in horsemanship, or ride the horse yourself."-"Seats and Hands," in Journal of the Royal Artillery.

* * *

"A cynic once made the remark, perhaps not quite devoid of truth, that no horse has a sufficiently good mouth to be perfectly controlled by a snaffle, and that no man has good enough hands to ride a horse on the curb."—Journal of the Royal Artillery.



Notes on Field Artillery.* The title to this little volume announces its purpose, and the endeavor of the author appears to have been throughout to explain in simple, non-technical lan-

guage what field artillery is, what it can do and how it does it.

The necessity for such a work has long existed in our service. The majority of our officers have been wont to consider field artillery a purely technical arm of the service, whose functions on the field of battle were to get into position and shoot, and whose tactics did not extend beyond finding a position within good artillery range from which the enemy might be seen and fired upon. This idea has led in the past to serious misconceptions of its functions, and on the few occasions within recent years, when the guns have been used in our army, the artillery commanders have been sometimes so hampered by orders limiting their actions or so neglected in the whole matter of information and orders as to render them unable to accord the proper support to the other arms.

^{*&}quot;Notes on Field Artillery for Officers of All Arms." By Captain Oliver L. Spaulding, Jr., Fifth Field Artillery, U. S. Army. Published by the U. S. Cavalry Association, Fort Leavenworth, Kansas. 1908. Price, \$1.25; if desired without maps, \$1.00.

The lessons of the Russo Japanese War, though this was fought with guns whose fire was only "accelerated," and the advent of the rapid fire materiel have so clearly developed the fact that field artillery is not only a technical but a tactical arm, that it has become apparent to all students of tactics that a commander who fails to utilize his artillery to the best advantage is likely to risk defeat or to attain his object only after disproportionate losses to his infantry.

Moreover, when we consider the increased power of the new materiel, a battery of four rapid fire field guns being able to develop a greater volume of fire than six batteries of six guns each of the old materiel and to distribute that fire to better advantage, both in front and depth, the necessity to a commander of a good working knowledge of the tactical employment of field artillery becomes more important than ever before

The subjects of materiel, methods and tactics have been treated very extensively by a number of foreign writers, notably Rouquerol, Langlois, von Rohne and Aubrat, and very detailed studies have been made of reconnaissance, the occupation of positions, control and direction of fire, etc., but the average cavalry or infantry officer will not care to wade through the mass of technical matter in their works for the limited information he desires.

Captain Spaulding's book seems to supply admirably just what these officers require The opening chapters acquaint them in clear, concise language with the general characteristics of the arm, its classification and organization, giving here and there historical examples which add to the interest of the text, and closing with a summary of the organization of the field artillery of foreign armies which cannot but be of value to everyone.

The chapters on materiel, methods of fire and drill regulations are clear, intelligible, and do not go into unnecessary detail. The diagrams materially assist the text, and in some cases more clearly explain the principles of construction than would an examination of the gun itself.

The chapter on tactics, the most important in the book, is necessarily short and rudimentary. The tactics of field ar-

tillery can be expanded into volumes, just as can those of the other arms; in fact, volumes have already been written on the subject, and no doubt the future will produce many more.

The idea has been to give the reader a good general conception of the role which field artillery will play in battle, how it comes into action, its duel with the opposing artillery, the diversion of its fire to the enemy's line of battle, its support of the advancing infantry until the last moment when it can safely fire on the hostile position, and its action after a successful assault or a repulse. The order and sequence of events might be criticised, since there is no determinate type of combat, each case admitting of a number of solutions; but it is safe to say that, should the critic attempt to produce a more satisfactory solution, his work might be subjected to as much criticism as the text.

The last chapter deals with the concrete case, at present the favorite method of demonstrating tactical principles. In the first case, a tactical situation is given of field artillery with a small command, and the resulting problem is solved. This problem has already been published in a volume of "Studies in Minor Tactics," and is used in the course of instruction at the Fort Leavenworth Service Schools.

Following this are six problems in artillery fire and maneuver tactics, based on the maps of Forts Leavenworth and Riley. It is to be regretted that two maps are necessary with the book, but it should be taken into consideration that as yet we have but few maps, and those of limited area, on which such problems can be solved. Moreover, in the solution of map or terrain problems, it is well to have a variety of topographical forms, lest we be led to deduce general principles from special cases.

In conclusion, the book seems to fulfill the purpose for which it was written—that of making the cavalry and infantry better acquainted with the arm which will be their powerful auxiliary if properly used; and it is hoped that the field artillery may be the greatest gainer by this better understanding, through the bond of interest and cordial cooperation which it is desired to establish.

Staff Rides and

This is a new book of 405 pages on the method of conducting staff rides, and is Regimental Tours.* exceedingly valuable to one who is to act as director or assistant.

"Staff Rides" is a somewhat generic term applied to military studies or exercises on the ground by officers without troops. As such it is manifest that they can be made to illustrate, and enable officers to practice, any kind of military operations in the field, from the movements of a patrol to strategical and tactical operations on a larger scale, including the problems of logistics and sanitation incidental thereto. Logically, however, the term should be limited to those terrain exercises held for the instruction of staff officers. Tactical rides or walks to enable officers to study how companies, battalions and regiments would actually be handled under given conditions, the author calls "regimental tours."

With a clever director, staff rides afford a valuable means of educating officers, and should form a part of the scheme of instruction at every post.

Including the terrain exercises of the School of the Line, staff rides now form a part of the progressive course of practical instruction at the Fort Leavenworth Service Schools. This instruction begins with map problems, and is carried through the terrain exercises of the School of the Line, staff rides in the Staff College, and the war game and field maneuvers in both schools, the Signal School cooperating.

The great drawback is the great amount of work involved. and the difficulty of finding officers who are really skillful directors. It is so much easier to work map problems and practice the war game, that we are apt to find no time for the more strenuous outdoor work.

In the introduction the author discusses the methods of imparting military training, and gives examples of what staff rides enable officers to study. For example:

- The preparation of plans of campaigns.
- The organization of systems of intelligence (information).

^{*&}quot;STAFF RIDES AND REGIMENTAL TOURS." By Colonel R. C. B. Haking, of he British Service. Hugh Rees, Ltd., London, 1908. Price, 8s. 6d. net,

- 3. The organization and defense of the base and line of communications.
- 4. The study of strategical and tactical situations from day to day—reconnaissance, marches, halts, camps or bivouacs, etc.
 - 5. The preparation and issue of orders.
 - 6. Transportation.
 - 7. Supply.
 - 8. Discipline, prisoners of war, etc.
 - q. The sanitary service.

And many kindred questions enabling instruction to be given to all classes of staff and line officers.

Chapter II is devoted to the preliminary arrangements for a staff ride.

In Chapters III to VII the preparation of the scheme is discussed. This is unduly elaborated. Any able officer with a good imagination can devise some scheme on any piece of ground. Judging from the space the author has given this subject, one might infer that Englishmen are as unimaginative as they are sometimes said to be.

The remainder of the book is devoted to studies exemplifying methods of conducting different staff rides. Situations are given and the officers required to solve the many problems that can be based thereon. The chapters on appreciating (estimating) the situation, and on orders, are especially interesting.

A packet at the end contains numerous small sketches and other matter explanatory of the text. The book is well written, and a good production of the bookmaker's art.

After reading the book, one wonders if English officers are as energetically studying the art of war as Colonel Haking implies—the work having grown out of experience. If so, they will not again, so long as this strenuous work continues, be subject to the criticisms which followed the Boer War.

D. H. B.

Report of the Santiago Campaign.*

For the first time, this official report of the late lamented Wagner becomes public property through private publication, and some new light is thrown on the

mistakes of the Santiago campaign, which the military student will do well to remember.

Early in June, 1898, Colonel Wagner was directed by the Major General Commanding the Army, to establish a bureau of military information, in connection with the headquarters of the army in the field (Tampa, Fla.), and by subsequent (confidential) orders he was directed to proceed to Santiago, open communication with General Garcia, and consult with General Shafter in regard to his duties.

Reading between the lines of Colonel Wagner's intensely interesting report, the reader will not fail to note that Colonel Wagner's efforts to carry out the instructions of the Major General Commanding the Army, were not very heartily seconded by the commander of the Fifth Army Corps, although the latter had been enjoined to afford "every facility" for carrying out those instructions. The reconnaissance work was claimed by the Chief Engineer of the corps; General Shafter refused to make use of the clerical force and secret service funds at Wagner's disposal; and his assistant, Captain Anderson, was detached. Not willing to remain an idle spectator, Wagner offered his services as volunteer aid to General Lawton, which offer was promptly accepted; and thereafter he had charge of Lawton's reconnaissance work. Previous to the battle of July 1st, Colonel Wagner reconnoitered on foot as far as the Ducrot House, about two miles beyond our outposts, and from his notes drew a rough map. showing a new trail which was subsequently used by Ludlow in moving upon El Caney.

In brief, Colonel Wagner's comments are as follows:

Embarkation.—There was much confusion and delay in loading the transports; clothing was unsuitable; supply of-

^{*&}quot;REPORT OF THE SANTIAGO CAMPAIGN." By Arthur L. Wagner, Lieutenant Colonel, U. S. Army, Assistant Adjutant General. Franklin Hudson Publishing Company, Kansas City, Mo., 1908. Price \$1.00.

ficers were inexperienced; shipping quartermasters failed to mark on cars the character of the contents; the private traffic on the Plant System running into Tampa was allowed to interfere with important government business; the transports were deficient in quantity and unsuited in quality; and, in general, there was lack of a carefully thought out system.

Landing.—The choice of a landing place was judicious, but some provision should have been made for communication between fleet and shore, and for proper reconnaissance. The landing was effected with much difficulty because there was but one lighter with the transport fleet; and although by sunset of the first day Wheeler's command had been landed, not a single horse or mule was ashore—a fact which materially affected subsequent operations.

The Advance.—The regiment designated as advance guard for Lawton's division was not ready, owing to delay in preparing breakfast for the men, and the march did not begin until thirty minutes after the appointed hour. This, in Colonel Wagner's opinion, caused the advance guard to miss meeting, and perhaps defeating a Spanish battalion at Siboney. As there was not a single mounted man with the entire command moving forward at this time, the hostile battalion was able to escape. At Siboney, Wagner took pos session of the first Spanish flag captured in Cuba.

Las Guasimas.—Colonel Wagner comments adversely on General Wheeler's action in moving forward to attack the Spaniards at Las Guasimas; Lawton was to have been in advance, and Wheeler, Kent and Bates were to follow in the order named. The army was first to be concentrated at Siboney, and there supplied with the requisite rations and ammunition before beginning a forward movement; this plan was disarranged by Wheeler's march to Las Guasimas.

The action at the latter place, and the hurrying forward of Lawton's command to Wheeler's support, seriously affected the supply question, as no food supplies were ready to be sent so far to the front, and Young's brigade also needed ammunition. There was, therefore, for some days, a serious lack of supplies, including medical stores. One of the most serious drawbacks was lack of tobacco.

The Battle.—Colonel Wagner criticises the lack of proper reconnaissance, which was not sufficient to locate the enemy's position, or gain adequate knowledge of the ground over which the attack was to be made. It could easily have been effected by half a dozen officers' patrols, but nothing of this kind was ordered, although there were doubtless many competent young officers who would have been more than willing to undertake such duty.

Colonel Wagner considers the plan of battle, an attack on El Caney, a subsequent independent attack on San Juan, and an envelopment of the San Juan position by the El Caney troops, "as good as any that could have been devised." But its faults lay in its execution, and these, the writer ascribes primarily to lack of proper reconnaissance of the ground west of El Pozo.

Although three days' rations were ordered supplied the troops before the battle, this order does not appear to have been carried out.

El Caney.— The fire from Capron's battery upon El Caney was "feeble;" his guns were unopposed by artillery, and remained at long rifle-range from the Spanish position; the artillery fire was scattered too much, and failed to properly prepare the infantry assault until very late in the day.

The order of the corps commander to withdraw Lawton's entire force from in front of El Caney is incomprehensible. If it was necessary to attack El Caney at all, or to mask it, it was certainly necessary to leave adequate force to hold the Spanish force in check.

San Juan.—Preceding the battle, it became necessary for Generals Kent and Hawkins to ride forward under fire and make a reconnaissance—"which should have been made before by others." Consequently, the troops "pushed along blindly, not knowing where they were going, and, owing to the lack of intelligent orders regulating the march, the road was distressingly crowded"—the parallel columns of the infantry and cavalry divisions moving on the same narrow route.

The disastrous balloon reconnaissance brought about a loss of from sixty to one hundred men, and the sole result accomplished was the discovery of a narrow trail to the left, which should have been located by a small patrol. For the first, and perhaps the last, time in military history, a balloon was seen on the skirmish line.

Referring to the Seventy-first New York Volunteers, Colonel Wagner states that they became demoralized, refused to move forward, and many broke in panic to the rear. General Kent and his officers formed a cordon for the purpose of stopping them, but, finding this impossible, they were ordered to lie down in the thicket, and the Third Brigade "marched over their prostrate forms."

The separation of the Rough Riders from the troops in the rear, and the regiment's march of about half a mile to the right flank, is ascribed by Colonel Wagner to the "hazy orders to establish connection with and lend assistance to Lawton"

"In the battles of the 1st of July," the writer says, "the part played by the artillery was very disappointing to the army. The smoke of Grimes' battery rendered it an easy mark for the enemy's guns, and its fire ceased after about three-quarters of an hour; Best's and Parkhurst's batteries then took position on the firing line, and the artillery was again in action at intervals." * * "The services of the Gatling battery were conspicuous and of great value."

Aguadores.—Regarding General Duffield's demonstration against Aguadores, the writer says: "The operation was generally regarded as a failure, though its success seems to have been problematical from the first. If Duffield's command could have been landed on the west side of the river, it could have taken the enemy in flank, and doubtless could have effected important results."

After the Battle.—Referring to the round-about night march of Lawton's division on the night of July 1-2, Colonel Wagner says:

"I have never been able to understand the cause for this movement, nor has anybody who was in position to know ever explained it to me. It seems to have been undertaken from a fear of a heavy attack on Lawton's right. * * *

"Owing to illness resulting from fatigue, and heat prostration. General Shafter was unable on the 1st of July to exercise the influence on the course of battle that a commanding general is ordinarily expected to exert. Early in the day he took his position on a high hill, near his headquarters, in order to get a better view of the field; but, unfortunately, the nature of the country was such that an unobstructed view could not be obtained, nor, owing to the general use of smokeless powder by the two contending armies, could the course of the battle be traced by the lines of smoke, as might have been done a few years ago. In the afternoon he rode to El Pozo, but, owing to his illness, was compelled to return to his headquarters. His physical infirmity thus prevented him from being present with the troops, and the peculiar topography of the country rendered it impossible for him to gain speedy information in regard to the condition of affairs at the front. As a result, his aids were compelled in some cases to give important orders on their own responsibility; the subordinate commanders were in many instances compelled to act upon their own initiative; and the confusion was greatly heightened by the lack of knowledge of the terrain over which they were operating, and also by the fact that the brigades and divisions were newly organized, and had had no experience in operating together."

The above is quoted in full, because it has been a matter of some controversy just what control the commander of the Fifth Army Corps exercised over the battles of July 1st; the facts quoted above materially agree with the testimony of many other eye witnesses.

General Comments On the Campaign.

Colonel Wagner believes it was good tactics to combine a front and flank attack, and that if these attacks had been timed to occur simultaneously, the Spanish position would have been carried without serious loss. The great defect in carrying out the plan was the lack of reconnaissance, resulting in putting Kent's and Wheeler's divisions in a position where they were prematurely under both infantry and artil-

lery fire, while supposed to be awaiting the result of Lawton's attack on El Caney.

"It is a curious fact," says Colonel Wagner, "as illustrating the difference in the magnitude of the military operations in the two wars, that the loss of the Army of the Potomac at Fredericksburg was almost equal to the total strength of our army at San Juan—El Caney; and it is also worthy of note that the percentage of loss of the assailants in the Cuban battle was nearly as great as in the unskillful and desperate front attack made by Burnside nearly thirty years ago."

The author believes that Kent's and Wheeler's divisions should have been kept out of the battle until the result of Lawton's fight at El Caney was decided, even if that were not completed until July 2d. Lawton, he believes, would have been fairly safe from attack from the direction of Santiago, and if so threatened, it would have given opportunity for our divisions in reserve to strike the Spaniards in motion, instead of behind intrenchments. El Caney once taken, and Lawton on the Spanish left flank, the hostile trenches on San Juan and Kettle Hills would have soon been untenable. The Spaniards would undoubtedly have fallen back to their interior lines near the city, and a regular siege have ensued.

Smokeless Powder,—Colonel Wagner's observations led him to believe that the morale of the men was improved and not impaired by the use of smokeless powder; the absence of bewilderment and confusion caused by smoke more than compensating for the clearer view of the casualties of battle.

The Artillery.—"Much disappointment was felt throughout the army at the inefficiency of our artillery." It was insufficient in numbers, and it was handicapped by its black powder ammunition. Tactically, the artillery showed a disposition to fight at long range.

Cavalry.—It is doubtful if any other body of cavalry in the world could have performed the dismounted work that was so well carried through by the cavalry division in Cuba. "It is to be regretted that there was not in the army of invasion a greater number of mounted troops. * * * I have no hesitancy in saying from my own knowledge, that a force of cavalry used on reconnoitering duty would have

been of inestimable value, and I am satisfied that if a single mounted troop had been with Lawton on the morning of the 23d of June, the campaign would have been opened with the capture of a Spanish battalion."

Infantry.— The experience of the campaign demonstrated the fact that it was unwise to have skeleton battalions in infantry regiments, unless such battalions are to be in excess of the actual fighting strength desired for war.

Tactically, the field exercises held at army posts for some years preceding the war, was in evidence in the adaptation of the tactics to the ground. In some cases the first battalion formed the firing line, the second battalion in reserve; in others, the whole line was deployed immediately. The squad system of leading was used by the Seventy first New York alone, and Colonel Wagner doubts the practical advantages of the squad system in moving into battle.

Ammunition.—The fire discipline of the regular regiments was excellent, in large part due to training in field exercises and to target practice. The total expenditure of ammunition on July 1st did not exceed one hundred rounds per man.

The solution of the question of supplying ammunition to the firing line, seems to have been found at Santiago in the words, "pack-mules and courage."

The Krag-Jorgensen rifle proved itself a thoroughly satisfactory weapon; the Springfield rifle, using black powder, was not only in itself an inferior weapon but resultantly ruinous to werely.

In general, Colonel Wagner thinks the troops should have carried intrenching tools; the uniforms worn by our troops were unsatisfactory; the efficiency of the pack-trains was a matter of general comment and invariable praise; there was a distressing lack of facilities for transporting the wounded to the rear, and the lack of anything like a systematic mail service was seriously felt.

Comparing the relative efficiency of the Line and Staff at Santiago, Colonel Wagner tells us frankly that the former was greatly superior to the latter.

"The Staff consisted of a heterogeneous aggregation of officers, some of whom had had experience in the regular staff departments in time of peace, many more who had been taken from the Line to perform duties to which they were not fully accustomed, and many others who had been com missioned from civil life outright, without any special training in their staff duties, and in some instances without any military knowledge whatever. I know personally of a number of cases where newly appointed staff officers, holding the rank of assistant adjutant general, inspector general, etc., were provided with assistants in the form of able lieutenants of the regular service, who instructed them in their duties, and performed the greater part of their work."

As to the enemy, the defense of the Spaniards was characterized by courage rather than by skill. They could have made a more stubborn rear-guard defense between Siboney and Santiago; and their small patrols could have caused great confusion at night, by energetic action. The Spanish trenches were of good profile, but were often mistakenly placed on the actual instead of the military crest of the slope.

Colonel Wagner's report makes interesting reading. His frank criticisms are the criticisms heard at the time from the lips of the men behind the guns, and in all essential particulars, are only too true. The Santiago campaign is not yet so far distant that we cannot take these mistakes to heart, and see that they do not occur again. The truth sometimes hurts, but its ultimate effect cannot but be beneficial.

The responsibility for seeing that these errors do not recur in our next over-sea expedition, rests primarily with our General Staff. The engossing duties of peace should not crowd to the wall the foremost reason for the establishment of a General Staff, which is preparation for war.

C. D. RHODES, Captain, Sixth Cavalry. Stuart's Cavalry in the Gettysburg Campaign.* The historians of the Civil War have worked up quite a case against General J. E. B. Stuart and the Southern cavalry in the Gettysburg campaign. With much unanimity they have ascribed the South-

ern disaster to faulty use of cavalry, because Stuart disobeyed his orders by proceeding on a raid in rear of the Federal army, and because he was absent until after the battle began, and did not keep General Lee informed as to the position of the Federal army. This view has received powerful support from the official reports and from the writings of various prominent officers on the Confederate side

On the first point, the evidence is to be found in General Lee's two reports, dated July 31, 1863, and January, 1864, and in the letters of Lee and Longstreet, dated June 22 and 23, 1863. From a comparison of these data some curious . facts appear. First, that the report of July 31st does not correctly give the orders or the movements of Stuart. On June 23d. Lee at Berryville ordered Stuart to leave two brigades of cavalry with Longstreet in Virginia, and to join Ewell on the Susquehanna with three brigades. This order was sent to Stuart through Longstreet, who, in forwarding it, directed Stuart to take the very route he did take, and to cross the Potomac in rear of the enemy. Another letter informed Ewell that Stuart was to join him, and the order plainly required Stuart to move in advance of the two armies. But General Lee reported that: "General Stuart was left to guard the passes of the mountains, and observe the movements of the enemy, whom he was instructed to harass and impede as much as possible should he attempt to cross the Potomac. In that event, General Stuart was directed to move into Maryland, crossing the Potomac east or west of the Blue Ridge, as in his judgment should be best, and take position on the right of our column as it advanced." Further, the report says: "General Stuart continued to follow the movements of the Federal army south of the Potomac,

^{*&}quot;STUART'S CAVALRY IN THE GETTYSBURG CAMPAIGN." By John Mosby. Moffatt, Yard & Co., New York. 1908. Price, \$2.00.

after our own had entered Maryland." It is not necessary to comment on the historical accuracy of these statements, or to attempt to reconcile them with Stuart's orders. The report of January, 1864, partially corrects the first, but makes a number of inconsistent statements. It speaks of Stuart being directed to place himself on the right of Ewell; and a little further it says that Stuart was instructed to lose no time in placing his command on the right of the main column as soon as the enemy moved northward. It speaks of the damage to be done by Stuart in rear of the enemy, and says that he was expected to report the enemy's movements as soon as they crossed the Potomac. The plain meaning of this is that Stuart was supposed to be in two places many miles apart, at the same time, and that he was expected to communicate with Lee when the Federal army was in the way.

In both reports it is stated that it was impossible to ascertain the intentions of the enemy on account of the absence of the cavalry, and we are led to infer that the battle of Gettysburg was brought on and resulted from that ignorance.

So far as Stuart himself was concerned, the answer is to be found in the orders which he obeyed. There were, however, two brigades left behind by Stuart with orders to follow the Confederate army on its right and rear. Why these brigades were absent at Gettysburg, why they remained in the passes of the Blue Ridge after Hooker's army had left their front, why the passes north of the Potomac were left unguarded while those south of the river were guarded, are questions which have never been satisfactorily explained. In view of Stuart's explicit instructions that they should follow the movement, we may perhaps agree with the author that the responsibility lies with some high commander who retained them south of the Potomac.

In further support of the complaint about the cavalry, the reports say that preparations were made to advance on Harrisburg, but that on the night of the 28th, a scout brought the first information as to Hooker's crossing the river. Lee's letter book, however, shows that Ewell was ordered to turn back before the 28th, that Lee knew of Hooker crossing on the 27th, and Colonel Mosby proves that the scout incident

probably did not occur at the time and place stated. The story of the scout is always given in connection with criticism of Stuart, but as Lee certainly knew of Hooker's movements on the 27th, it is no longer of importance.

What information Lee had between June 24th, when Hooker put his army in movement, and the 27th, when Ewell was ordered to return, we cannot say. It is not reasonable to suppose that Hooker withdrew his army from Lee's front and marched on a parallel route a few miles away, and that Lee should have been in complete ignorance of it all. When Lee was at Hagerstown he was not more than nine miles from the Federal corps at Boonsboro.

In order to fix responsibility upon the cavalry it seems to be necessary to believe that Lee ordered the march on Gettysburg. It was so stated in the report of July 31st, but not in the later report. If he ordered a march on Gettysburg he was deprived of his cavalry in an important movement, so it seems to be argued. But if Lee ordered a march from Chambersburg on Gettysburg, he would have been marching more than 50,000 men on a single road against an enemy when several roads were available. General Lee's generalship does not deserve such an imputation. As a matter of fact General Lee did not order the advance on Gettysburg until after the battle had begun, and this fully accounts for the loose way in which his concentration was made

The battle of Gettysburg seems to have begun by the common error of converting a reconnaissance into a battle. The officers responsible were A. P. Hill and Heth. They began the battle without orders, and after they were deeply engaged Lee supported them with the entire army. This tendency of A. P. Hill to rush into a fight without proper reconnaissance was common with him, and occurred also at Mechanicsville and at Bristoe Station where it failed, and at Antietam where it won. General Lee seldom commented adversely on an officer. None of his most trusted subordinates were free from fault at one time or another, as we see it now. His greatness of heart is shown nowhere so prominently as in his treatment of Jackson in the Seven Days, of

Longstreet and Ewell at Gettysburg, and of Hill on the occasion mentioned. This makes it all the more remarkable that he should have departed from his rule and not only blamed Stuart, but that he did so by such partial and inaccurate statements of fact. The only possible explanation is that suggested by Colonel Mosby, that Lee did not read the reports that he signed.

From time to time it is necessary to revise history and to prove that many accepted ideas are without foundation. Since the Civil War much of this has been done, but seldom do we find a single book in which so many accepted statements are exploded. Much of this new matter is due to careful examination of General Lee's private letter book, the story of which, as told by Colonel Mosby, is interesting. At present it looks as if the history of the battle of Gettysburg would have to be rewritten.

EBEN SWIFT.

The Leipzia The author may be said to have had a life-long acquaintance with the events of Campaign * this campaign. His early years were spent in Germany in districts which had been repeatedly overrun by the French armies, and at a time when he had the opportunity to learn from the lips of numerous survivors something of the inner history of the struggle for German independence. But while this early familiarity with its conditions has enabled him to give color and life to his narrative, it has also, unfortunately from a military standpoint, drawn him into a discussion of numerous political and diplomatic questions which have entailed the omission of many details of the campaign of vital interest to the military student. This is always a serious temptation to the writer of military history; to digress in descriptions of attendent circumstances and allow a few strategic generalizations to pass for the military features instead of marshaling the facts and allowing them to point their own moral.

^{*&}quot;THE LEIPZIG CAMPAIGN—1813." By Colonel F. N. Maude (Late R. E.).
No. 7. of the Special Campaign Series. The Macmillan Company, New York.
1908. Price 5 shillings.

A slight bias is also suggested in some passages which may come either from the writer's early sympathies or from a too close reliance upon such writers on this campaign as Holleben and Friedrich. The Prussian is an excellent critical historian of other people's wars, but when his own are in question, loyalty to his army, his people, and his reigning house, appears either to blind him to certain classes of fact or to prevent his speaking the whole truth.

In regard to Napoleon and his mastery of the art of war, the author takes the view that his success was due rather to the intuition of genius than to the results of intellectual study, and that Napoleon himself "never intellectually realized the secrets of his own success," and in consequence, when he was thrown by force of circumstances on the defensive, "his inspiration did not suffice to show him the best way in which to avail himself of the chance given him" by his opponents. This view is difficult to reconcile with the facts in other Napoleonic campaigns.

In spite of these defects, however, the book deserves a cordial reception. It is well arranged; its narrative is clear and sequential, and the ten accompanying maps make it easy to follow the course of the campaign. Taking it all in all it is undoubtedly the best history of "1813" yet published in English.

A. L. C.

Military Maps The first question that occurs to one on taking up a new book which purports to instruct rather than to amuse is: What need is there for this? Does it fill some recognized gap in our scheme of knowledge, or extend and bring up to date something about which ideas have changed? Or does it, while not presenting anything new, so present old matter as to make it clearer and better available for the student's use? Measured by either test, there is no doubt that the publica-

^{*&}quot;MILITARY MAPS EXPLAINED." By Captain H. E. Eames, Tenth U. S. Infantry, Instructor Department of Engineering at the Army School of the Line, Army Staff College and Army Signal School, Fort Leavenworth, Kansas. Franklin Hudson Publishing Co., Kansas City, Mo. Price, \$1.00 postpaid.

tion of the author's valuable little book is justified. The modern development in the art of map making and the multiplication of maps, together with the absolute necessity for their continual use, not as an auxiliary, but as a main reliance in preparing the widely extended dispositions necessary in these days, makes it essential that an officer should be able to read his map as easily as he reads its printed legends. The author says:

"It is, therefore, necessary for all officers to possess a knowledge of map reading; and by this is meant, not an ability laboriously to dig out the meaning of the map, but an ability quickly to grasp the features of the ground from a contoured map. It is not sufficient that the officer should be able to follow a road from the map, or to determine distances; he must also know what the slopes are, the steepness of grades of the roads, the relative heights of hills, etc.; in a word, he must be able to form a perfect mental picture of the ground, and group its features as though he were actually on the ground itself."

He then shows how this facility is to be acquired by taking up the subject under six heads, which will be discussed seriatim.

Conventional Signs.—Two pages are devoted to illustrations of some of the more conventional signs, and comparisons are made with the corresponding French and German signs, with explanatory notes and an illustration of a slope as depicted by contours and by hachures. Appendix I gives a very useful table of names and abbreviations found on German maps, with their French and English equivalents.

The Scale of the Map.—Having acquired the ability to recognize conventional signs, the next essential element of map reading is stated to be the ability to appreciate distances on the map—to grasp the scale. The word appreciate conveys just the idea the author has, which is that the skilled map reader should, by practice, have acquired the ability to measure map distances by eye within a small limit of error. After defining a scale and clearly explaining the preliminary calculations, he shows how the graphical scale is constructed to read familiar units, to make graphical time scales, etc., and

illustrates the use of the dividers and curvimeter in scaling map distances.

The Determination of Directions.— The author may, on occasions, have spoken disrespectfully of the equator, but he gives the true and magnetic meridians their full due. The cardinal points of the compass are explained, as well as the graduation into degrees, and stress is laid on the value of learning to estimate direction as well as distance.

Contouring.—The definition of a contour is illustrated by a drawing of a vertical cut along a canal, the strata all of uniform thickness. The projection on the plot of the stakes marking the limits of each strata are points of their respective contours, and other sections give other points, from which the contour line on the map is determined. Then the relation which exists between steep or gentle slopes and the distances between contours representing these slopes is examined, and the principle deduced which enables one to know at a glance from the map where the slope is steep and where gentle, and where it changes. The discussion is carried further, and by a simple application of mathematical principles, three methods are deduced by which the actual slope in degrees can be read from the map. The author might, perhaps, better have laid more emphasis than he did on the third method, the use of the graphical scale of map distances, for this is easily constructed by the method he gives, and is, in a practical sense, the only method that would be used. Gradients are defined and explained, and among others of their uses, that in determining the degree of slope is described. Table I shows the influence of slope on movements of troops and vehicles.

Visibility.—"Of all the problems which arise in map reading, probably none are so frequent as questions involving visibility. 'Can the bridge at A be seen from the hill at B?'" The author first shows that visibility depends on the general convexity or concavity of the surface, then analyzes the graphical method of determining visibility of one point from another, and also where the line of sight pierces the ground. He follows this with two shorter methods by calculation. A variation of the above problem, to determine how far above

or below a particular point the line of sight passes, is explained, and is also the determination of the area visible from a given point. The author regards this subject of visibility as of prime importance, and gives no fewer than twenty-four pages of examples, each carefully worked out on the Fort Leavenworth map. A study of these examples, using the principles and methods given, should give the student a thorough understanding of visibility problems. In this chapter is a short description of the proper method to picture troops on the map.

Map Reading in the Field.—The final chapter covers the subjects of orienting the map and identifying one's place and closes with some valuable practical hints. There are also forty additional problems covering all the subjects in the text. Several extra maps are included with the book to be used in practice and so avoid defacing the reference map.

It is to be hoped that in subsequent editions, which will undoubtedly be called for, the typographical errors now existing may be corrected. It would make for verisimilitude if the sand strata in Plate 6 were made to form a more natural slope.

This book is timely and valuable. It covers, clearly and concisely, a subject that has not received the attention in our service that it deserves.

G. E. S.

Making a This book comprises seventy pages of discussion and recommendation, covering pretty thoroughly the elementary instructof the National Guard soldier. It is more an enunciation

tion of the National Guard soldier. It is more an enunciation of principles than a detailed scheme of instruction, and the author has endeavored to fix these principles in the mind by incorporating a system of questions and answers on the text. Discipline, drill, health, habits and records are covered, and the author takes the sound view that the beginning and end of efficiency in each of these is discipline. A number of

^{*&}quot;MAKING A SOLDIER." By Lieutenant Colonel A. C. Sharpe, U. S. Army. The Acme Publishing Company, Cleveland, Ohio, 1908. Price 75 cents.

practical suggestions of value appear under each of the above heads, and the chapter on the soldier's health makes plain to the company commander that his responsibility for his men's physical well-being is even greater than that of the surgeon. This book should take respectable rank among the other manuals of the same type intended for the National Guard.

G. E. S.

Hints on Horses.* This is a small but interesting volume of one hundred pages, covering in condensed form the principal points regarding the care, treatment, purchase, etc., of horses. Throughout the work reference is made to the service of the horse in tropical as well as in temperate climates, and to one who has not had previous experience in hot climates, this book will prove especially interesting and instructive.

R. D. W.

Guide to

Army

Signaling.†

This is another of the numerous shilling hand books from the press of Gale & Polden, which is intended to prepare "Regimental Signalers" in the British

army for the annual inspections, at which time their proficiency in these duties are tested. It is in catechismal form and divided into the following sub-heads: Flags, heliograph, lime light, Begbie lamp, telescopes, signal stations, message forms, counting and entering words, station work, naval and military inter-communications, signaling in the field, lines of stations, the prismatic compass and map reading.

E. B. F.

^{*&}quot;HINTS ON HORSES." By Major H. P. Young, late Fourth Bombay Cavalry. Gale & Polden, No. 2 Amen Corner, Paternoster Row, London. Price, 1 s. net.

^{†&}quot;GUIDE TO ARMY SIGNALING, INCLUDING THE PRISMATIC COMPASS AND MAP READING." By Ronald L. Q. Henriques, the Queen's Regiment. Gale & Polden, Ltd., London. Price, one shilling.

The Sword and How to Use It.*

This book of seventy-three pages is a practical treatise on the use of the sword or saber by the instructor in swor man-

ship at Aldershot. That the author is a master of the art is shown by the fact that he is the champion swordsman of the British army and navy for the years 1006-7-8.

To the very few in our army who still believe in and practice fencing as a grand bodily exercise that cultivates activity and promotes physical development, this work will be of interest and value.

It is well printed on good paper, in clear, large type, and the illustrations are first-class.

E. B. F.

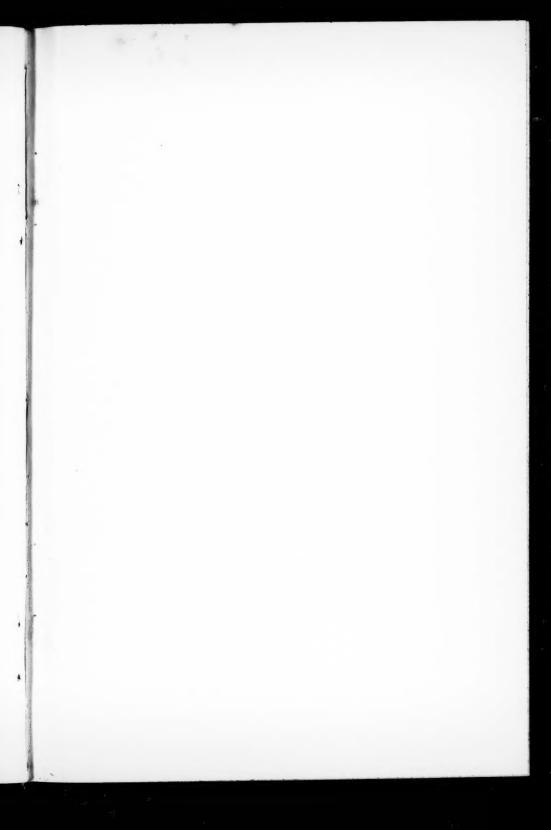
The Guardsman's In none of the numerous handbooks for the National Guard that we have seen is there so much of practical importance to the enlisted man of the National Guard as can be found in this little work of thirty-one pages. As is stated in the preface, it is not intended as a technical treatise for the officer, but a simple compilation of the more important points that should be first taught to the recruit.

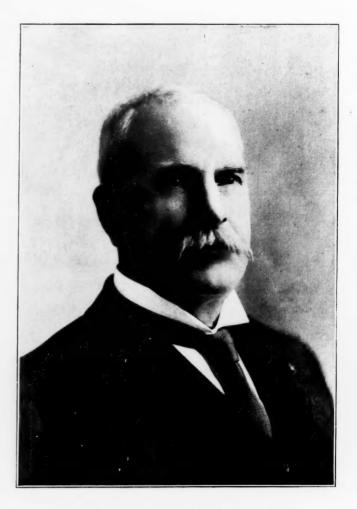
It is divided into the following heads: A talk with the enlisted man; military courtesy; honors to the colors, etc.; military appearance; and sentry duty. In the first, is fully explained the present status of the National Guard under recent legislation, and much good advice is given that every member of the National Guard should take to heart. The other subdivisions cover the subjects in clear, concise, and simple language.

E. B. F.

^{**·} The Sword and How to Use It." By Lieutenant J. Betts, Master-at-Arms, Army Gymnastic Staff, Aldershot. Gale & Polden, Ltd., No. 2 Amen Corner, Paternoster Row, London, E. C. 1908. Price 2s. net.

^{†&}quot; The Guardsman's Handbook." By Lieutenant Richard Stockton, Jr., late of the Third Infantry, National Guard of New Jersey. Battey & Webb, 1490 Rokeby Street, Chicago. 1908. Price 25 cents. Special prices if ordered in lots of fifty or more.





BRIGADIER GENERAL EDWARD A. GODWIN,
UNITED STATES ARMY, RETIRED.
(Late Colonel Fourteenth U. S. Cavalry.)

